Fishery Management Report No. 06-37

Annual Management Report 2005 Bristol Bay Area

by

Charlotte Westing,

Tim Sands,

Slim Morstad,

Paul Salomone,

Lowell Fair,

Fred West,

Chuck Brazil,

and

Keith A. Weiland

June 2006

Alaska Department of Fish and Game **Divisions of Sport Fish and Commercial Fisheries**

Symbols and Abbreviations

The following symbols and abbreviations, and others approved for the Système International d'Unités (SI), are used without definition in the following reports by the Divisions of Sport Fish and of Commercial Fisheries: Fishery Manuscripts, Fishery Data Series Reports, Fishery Management Reports, and Special Publications. All others, including deviations from definitions listed below, are noted in the text at first mention, as well as in the titles or footnotes of tables, and in figure or figure captions.

Weights and measures (metric)

centimeter	cm
deciliter	dL
gram	g
hectare	ha
kilogram	kg
kilometer	km
liter	L
meter	m
milliliter	mL
millimeter	mm

Weights and measures (English)

cubic feet per second	ft^3/s
foot	ft
gallon	gal
inch	in
mile	mi
nautical mile	nmi
ounce	oz
pound	lb
quart	qt
yard	yd

Time and temperature

day	d
degrees Celsius	°C
degrees Fahrenheit	°F
degrees kelvin	K
hour	h
minute	min
second	s

Physics and chemistry

all atomic symbols	
alternating current	AC
ampere	A
calorie	cal
direct current	DC
hertz	Hz
horsepower	hp
hydrogen ion activity (negative log of)	pH
parts per million	ppm
parts per thousand	ppt, ‰
volts	V
watts	W

General

Alaska Administrative Code	AAC
all commonly accepted abbreviations	e.g., Mr., Mrs., AM, PM, etc.
all commonly accepted professional titles	e.g., Dr., Ph.D., R.N., etc.
at	@
compass directions:	
east	E
north	N
south	S
west	W
copyright	©
corporate suffixes:	
Company	Co.
Corporation	Corp.
Incorporated	Inc.
Limited	Ltd.
District of Columbia	D.C.
et alii (and others)	et al.
et cetera (and so forth)	etc.
exempli gratia (for example)	e.g.
Federal Information Code	FIC
id est (that is)	i.e.
latitude or longitude	lat. or long.
monetary symbols (U.S.)	$, ¢
months (tables and figures): first three letters	Jan,...,Dec
registered trademark	®
trademark	™
United States (adjective)	U.S.
United States of America (noun)	USA
U.S.C.	United States Code
U.S. state	use two-letter abbreviations (e.g., AK, WA)

Measures (fisheries)

fork length	FL
mideye-to-fork	MEF
mideye-to-tail-fork	METF
standard length	SL
total length	TL

Mathematics, statistics

all standard mathematical signs, symbols and abbreviations	
alternate hypothesis	H_A
base of natural logarithm	*e*
catch per unit effort	CPUE
coefficient of variation	CV
common test statistics	(F, t, χ^2, etc.)
confidence interval	CI
correlation coefficient (multiple)	R
correlation coefficient (simple)	r
covariance	cov
degree (angular)	°
degrees of freedom	df
expected value	*E*
greater than	>
greater than or equal to	≥
harvest per unit effort	HPUE
less than	<
less than or equal to	≤
logarithm (natural)	ln
logarithm (base 10)	log
logarithm (specify base)	$\log_2$, etc.
minute (angular)	'
not significant	NS
null hypothesis	H_O
percent	%
probability	P
probability of a type I error (rejection of the null hypothesis when true)	α
probability of a type II error (acceptance of the null hypothesis when false)	β
second (angular)	"
standard deviation	SD
standard error	SE
variance	
population	Var
sample	var

FISHERY MANAGEMENT REPORT NO. 06-37

ANNUAL MANAGEMENT REPORT 2005 BRISTOL BAY AREA

by
Charlotte Westing, Tim Sands,
Alaska Department of Fish and Game, Division of Commercial Fisheries, Dillingham

Slim Morstad,
Alaska Department of Fish and Game, Division of Commercial Fisheries, King Salmon

Paul Salomone, Lowell Fair, Fred West, Chuck Brazil, and Keith A. Weiland
Alaska Department of Fish and Game, Division of Commercial Fisheries, Anchorage

Alaska Department of Fish and Game
Division of Sport Fish, Research and Technical Services
333 Raspberry Road, Anchorage, Alaska, 99518-1565

June 2006

The Division of Sport Fish Fishery Management Reports series was established in 1989 for the publication of an overview of Division of Sport Fish management activities and goals in a specific geographic area. Since 2005, the Division of Commercial Fisheries has also used the Fishery Management Report series. Fishery Management Reports are intended for fishery and other technical professionals, as well as lay persons. Fishery Management Reports are available through the Alaska State Library and on the Internet: http://www.sf.adfg.state.ak.us/statewide/divreports/html/intersearch.cfm. This publication has undergone regional peer review.

Charlotte Westing and Tim Sands
Alaska Department of Fish and Game, Division of Commercial Fisheries,
546 Kenny Wren Road, P.O. Box 230, Dillingham, AK 99576 USA

Slim Morstad,
Alaska Department of Fish and Game, Division of Commercial Fisheries,
Main Street, P.O. Box 37, King Salmon, AK 99613 USA

Paul Salomone, Lowell Fair, Fred West, Chuck Brazil, and Keith A. Weiland
Alaska Department of Fish and Game, Division of Commercial Fisheries,
333 Raspberry Road, Anchorage, AK, 99518 USA

This document should be cited as:
Westing C., T. Sands, S. Morstad, P. Salomone, L. Fair, F. West, C. Brazil, and K. A. Weiland. 2006. Annual management report 2005 Bristol Bay area. Alaska Department of Fish and Game, Fishery Management Report No. 06-37, Anchorage.

TABLE OF CONTENTS

Page

TABLE OF CONTENTS (Continued)

LIST OF TABLES

LIST OF FIGURES

LIST OF APPENDICES

LIST OF APPENDICES (Continued)

ABSTRACT

The 2005 Bristol Bay Management Report is the forty-fourth consecutive annual volume reporting on management activities of the Alaska Department of Fish and Game Division of Commercial Fisheries staff in Bristol Bay. The report emphasizes a descriptive account of the information, decisions, and rationale used to manage the Bristol Bay commercial salmon (sockeye *Oncorhynchus nerka*, Chinook *O. tshawytscha*, chum *O. keta*, pink *O. gorbuscha*, and coho *O. kisutch*) and Pacific herring *Clupea pallasi* fisheries, and outlines basic management objectives and procedures. We have included all information deemed necessary to fully explain the rationale behind management decisions formulated in 2005. All narrative and data tabulations in this volume are combined in two sections, salmon followed by herring, to aid in the use of this document as a reference source. The extensive set of tables has been updated to record previously unlisted data for easy reference. Fisheries data in this report supersedes information in previous reports. Corrections or comments should be directed to the Dillingham office. Attention: Editor, Charlotte Westing, Togiak Area Management Biologist, P.O. Box 230, Dillingham, AK 99576.

Key words: Bristol Bay, management, commercial fisheries, Pacific herring, *Clupea pallasi*, sockeye salmon, *Oncorhynchus nerka*, Chinook salmon, *O. tshawytscha*, chum salmon, *O. keta*, coho salmon, *O. kisutch*, pink salmon, *O. gorbuscha*, Naknek, Kvichak, Egegik, Ugashik, Wood, Nushagak, Igushik, Togiak.

INTRODUCTION

MANAGEMENT AREA DESCRIPTION

The Bristol Bay management area includes all coastal waters and inland waters east of a line from Cape Newenham to Cape Menshikof (Figure 1). The area includes eight major river systems: Naknek, Kvichak, Egegik, Ugashik, Wood, Nushagak, Igushik, and Togiak. Collectively, these rivers are home to the largest commercial sockeye salmon fishery in the world. Sockeye salmon *Oncorhynchus nerka* are by far the most abundant salmon species that return to Bristol Bay each year, but Chinook *O. tshawytscha*, chum *O. keta*, coho *O. kisutch*, and (in even-years) pink salmon *O. gorbuscha* returns are important to the fisheries as well. The Bristol Bay area is divided into five management districts (Naknek-Kvichak, Egegik, Ugashik, Nushagak, and Togiak) that correspond to the major river drainages. The management objective for each river is to achieve desired escapement goals for the major salmon species while harvesting all fish in excess of the escapement requirement through orderly fisheries. In addition, regulatory management plans have been adopted for individual species in certain districts.

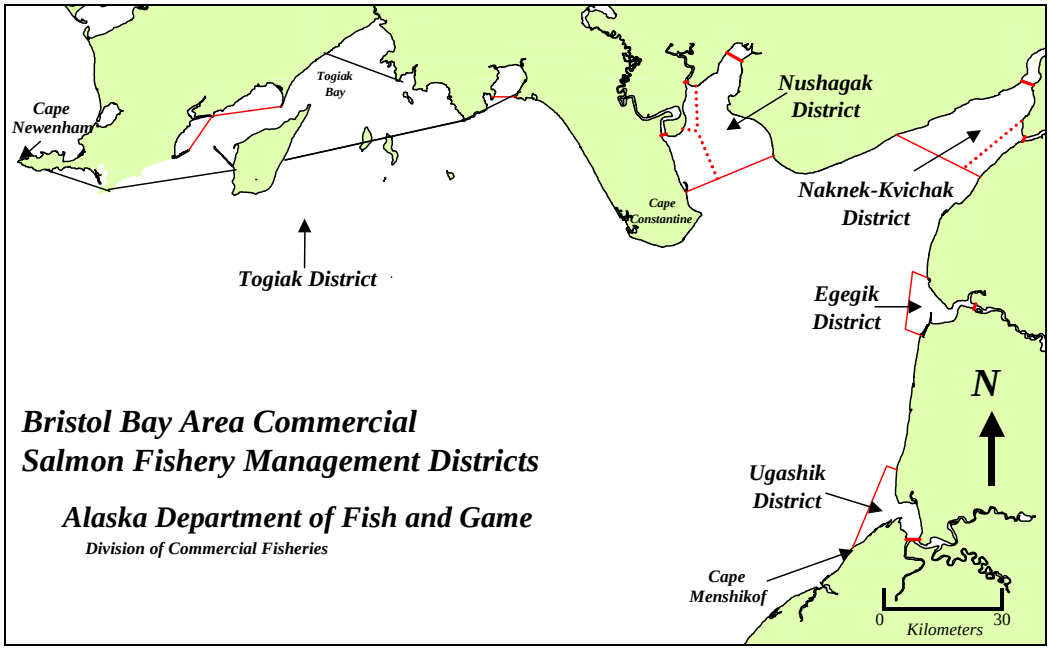

Figure 1.–Bristol Bay area commercial fisheries salmon management districts.

OVERVIEW OF BRISTOL BAY SALMON FISHERIES

The five species of pacific salmon found in Bristol Bay are the focus of major commercial, subsistence, and sport fisheries. Annual commercial catches (1985–2004) average nearly 24 million sockeye salmon, 70,000 Chinook, 907,000 chum, 108,000 coho, and 262,000 (even-years only) pink salmon (Appendices A3–A7). Since 1985, the value of the commercial salmon harvest in Bristol Bay has averaged $119 million, with sockeye salmon being the most valuable, worth an average $116 million (Appendix A27). Subsistence catches are comprised primarily of sockeye salmon and average approximately 150,000 (Appendix A29). Sport fisheries harvest all species of salmon, with most effort directed toward Chinook and coho stocks. Approximately 40,000 salmon are harvested annually by sport fishermen in Bristol Bay.

Management of the commercial fishery in Bristol Bay is focused on discrete stocks with harvests directed at terminal areas around the mouths of major river systems. Each stock is managed to achieve a spawning escapement goal based on maximum sustained yield. Escapement goals are achieved by regulating fishing time and area by emergency order and/or adjusting weekly fishing schedules. Legal gear for the commercial salmon fishery includes both drift (150 fathoms) and set (50 fathoms) gillnets. However, the Alaska Board of Fisheries (BOF) passed a regulation in 2003 allowing for two drift permit holders to concurrently fish from the same vessel and jointly operate up to 200 fathoms of drift gillnet gear. This regulation does not apply in special harvest areas. Drift gillnet permits are the most numerous at 1,862 in Bristol Bay (Area T), of those 1,526 fished in 2005. There are a total of 988 setnet permits in Bristol Bay, of those 760 made deliveries in 2005 (Appendix A2).

2005 COMMERCIAL SALMON FISHERY

RUN STRENGTH INDICATORS

Fishery managers in Bristol Bay have several early indicators of sockeye run size, including: the preseason forecast, the False Pass fishery, the Port Moller test boat, the district test program, and the early performance of the commercial fishery. Evaluated individually, each of these pieces of information may not give a correct assessment of run size. Collectively, they form patterns such as weak year classes, discrepancies with the forecast, or differences in run timing that can be important to the successful management of the commercial fishery.

PRESEASON FORECASTS

Total inshore sockeye salmon production for Bristol Bay in 2005 was forecasted to be slightly more than 32.8 million (Table 1). The Bay sockeye harvest was predicted to reach approximately 25.6 million fish. Runs were expected to exceed spawning escapement goals for all river systems in Bristol Bay.

The forecast for the sockeye salmon run to Bristol Bay in 2005 is the sum of individual predictions for nine river systems (Kvichak, Alagnak, Naknek, Egegik, Ugashik, Wood, Igushik, Nushagak-Mulchatna, and Togiak) and four age classes (ages 1.2, 1.3, 2.2, and 2.3, plus ages 0.3 and 1.4 for Nushagak) (Table 2). Adult escapement and return data from brood years 1974–2001 were used in the analyses.

Predictions for each age class returning to a river system were calculated from models based on the relationship between adult returns and spawners or siblings from previous years. Also, models based on the relationship between returns and smolt were examined for Ugashik River.

Tested models included simple linear regression, multiple regression, and 5-year averages. In addition, univariate and multivariate time series analysis models were examined. The models chosen were those with statistically significant parameters having the greatest past reliability (accuracy and precision) based on mean absolute deviation, mean absolute percent error, and mean percent error between forecasts and actual returns for the years 2002 through 2004.

SOUTH UNIMAK/SHUMAGIN ISLAND FISHERY

These fisheries were managed under a guideline harvest (quota) specified in 5 AAC 09.365, the South Unimak/Shumagin Islands June Fishery Management Plan initially adopted in 1974 by the BOF. The original intent of the BOF was to prevent overharvest of sockeye runs bound for river systems in Bristol Bay. In 2001, the BOF reviewed the management plan and concluded that because the fishery was based on the interception of stocks bound for Bristol Bay and the Arctic-Yukon-Kuskokwim region, it should be restricted to window periods of fishing time. These window periods were as follows: from June 10 to June 24 such that: "commercial fishing periods may occur only from 6:00 a.m. to 10:00 p.m. and may not be open for more than (A) 3 days in any 7-day period, (B) 16-hours per day; (C) 48-hours in any 7-day period; (D) two consecutive 16-hour fishing periods in any 7-day period." The BOF removed the previous regulations that were based on a chum cap and a percentage of the Bristol Bay preseason sockeye salmon forecast.

The management plan was again brought before the BOF for review in January 2003. At that time, the BOF restructured the management plan. The South Unimak/Shumagin Island June Fishery Management Plan (5 AAC 09.365) states: (a) "The South Unimak and Shumagin Islands fishery harvest both sockeye and chum salmon in a mixed stock fishery during the month of June. The sockeye salmon are predominantly of Bristol Bay and Alaska Peninsula origin. The chum salmon are bound for a number of areas, including Japan, Russia, the Arctic-Yukon-Kuskokwim, Bristol Bay, the Alaska Peninsula, and Southcentral Alaska. These salmon stocks have historically been harvested along the south Alaska Peninsula during the month of June. This management plan is intended to be consistent with the Policy for the Management of Sustainable Salmon Fisheries (5 AAC 39.222) and the Policy for the Mixed Stock Salmon Fisheries (5 AAC 39.220)". The BOF removed references to interception of Bristol Bay and Arctic-Yukon-Kuskokwim stocks and liberalized the fishing schedule: (d) Beginning June 7, the commissioner may open, by emergency order, commercial fishing periods for purse seine, drift gillnet, and set gillnet gear in the South Unimak and Shumagin Islands fisheries as follows: (1) commercial fishing periods will begin at 6:00 a.m. and run 88 hours, until 10:00 p.m. 3 days later; commercial fishing will be closed for 32 hours and reopen at 6:00 a.m. 2 days later (2) notwithstanding (1) of this subsection, the final commercial fishing period will end at 10:00 p.m. on June 29.

Preliminary catch information for 2005 indicates that the Shumagin Island fishery landed 567,000 sockeye, and the South Unimak fishery landed 437,000 sockeye (Appendix A28). The South Unimak sockeye catch was 57% of the 10-year average and the chum catch was 77% of the 10-year average. However, in the Shumagin Island fishery, sockeye catch was 50% higher than the 10-year average and the chum catch was 80% higher than the 10-year average. Therefore, the overall sockeye catch was 12% lower than the 10-year average and the chum catch was 24% higher than the 10-year average.

PORT MOLLER TEST FISHERY

From 1967–1985 the Alaska Department of Fish and Game (ADF&G) operated a test fish program based near the community of Port Moller. A large vessel fished specific coordinates on transect lines perpendicular to the migration path of sockeye salmon returning to Bristol Bay. Collected data was used to estimate strength, timing, age, and size composition of the run. Although the forecasting performance of the project was often inaccurate, the project was very popular with salmon processors because it gave an additional indication of run size, which influenced production capacity and the price paid to fishermen. The project did not operate in 1986, but through voluntary funding from the industry and support from ADF&G and the Fisheries Research Institute (FRI), the Port Moller test fish project operated from 1987 through 2003. In 2004–2005, the FRI contribution to the project was replaced by the Bristol Bay Science and Research Institute (BBSRI), which performed the bulk of the daily inseason analysis.

ECONOMICS AND MARKET PRODUCTION

In 2005, the exvessel value of the commercial salmon inshore harvest was estimated at $95.0 million. The 1995 to 2004 average exvessel value of Bristol Bay commercial salmon fisheries is about $83.2 million (Appendix A27).

During the 2005 season, 8 companies canned, 29 companies froze and 4 companies cured salmon in Bristol Bay. In addition, 21 companies exported fish by air (Table 28). A total of 36 processors/buyers reported that they processed fish from Bristol Bay in 2005.

RUN AND HARVEST PERFORMANCE BY SPECIES

The combined commercial salmon harvest in Bristol Bay totaled approximately 26.0 million fish in 2005. This was higher than the 20-year average of 24.9 million salmon (Appendix A8) for Bristol Bay.

Sockeye Salmon

The 2005 inshore sockeye run of 39.3 million fish was 20% higher than the preseason forecast of 32.8 million (Table 1). Actual runs were above forecast in all but the Egegik, Ugashik, and Wood Rivers.

Sockeye salmon dominated the inshore commercial harvest, and totaled 24.5 million fish (Table 4). Sockeye escapement goals were met or exceeded in all systems where spawning requirements have been defined. The Alagnak River experienced a very strong run again this year with 5.3 million returning leading to the second highest escapement on record.

Chinook Salmon

Chinook salmon harvests in 2005 were below the recent 20-year averages in all districts except the Nushagak where the harvest of over 62,000 salmon was 22% higher than the 20-year average (Appendix A4). The 2005 bay-wide commercial harvest of 76,000 Chinook was above the 20-year average of 70,000.

Chum Salmon

In 2005, the inshore commercial harvest of 1.3 million chum salmon, almost double the 10-year average of 658,000 and well above the 20-year average of 907,000 (Appendix A5). Chum salmon catches were below average in all districts but the Nushagak District and the Naknek-Kvichak District.

Pink Salmon

Bristol Bay has a dominant even-year pink salmon cycle; therefore, this year's run was small. The 2005 fishing season resulted in the incidental harvest of 3,000 pink salmon (Appendix A6). Comparisons with historical data are not meaningful for odd years.

Coho Salmon

The 2005 bay-wide commercial harvest of coho salmon totaled 75,000, 17% higher than the 10-year average of 64,000 fish (Appendix A7). Effort for coho salmon was low, resulting in a small harvest. However, all indications suggest an average to above average return in 2005 for all districts.

SEASON SUMMARY BY DISTRICT

Naknek/Kvichak District

The 2005 forecast for the Naknek/Kvichak District projected a total run of slightly more than 11.0 million sockeye, 3.3 million for escapement and 7.7-million to harvest (Table 1). The forecast by river system was 2.4 million to the Kvichak River, 4.9 million expected to return to the Alagnak River and 3.8 million for the Naknek River (Table 2). The escapement goals by river system are as follows: minimum 2.0 million for the Kvichak River, 185,000 for the Alagnak River and a range of 800 thousand to 1.4 million for the Naknek River. The actual total inshore run for 2005 was nearly 16.0 million sockeye salmon, 46% above the preseason forecast (Tables 1 and 3). The commercial catch was just over 6.7-million sockeye, with nearly 80% harvested in the Naknek River Special Harvest Area (NRSHA). The contribution of catch from the Kvichak and Alagnak Rivers prior to July 11 were minimal due to early efforts to reduce the catch of Kvichak bound fish.

The runs of Chinook salmon to Bristol Bay are many, however, the Nushagak River is the only system large enough for a forecast to be produced. ADF&G does not forecast Chinook, chum, or coho salmon for systems in the Naknek/Kvichak District. The commercial harvest of Chinook salmon has remained relatively insignificant, due to the current mesh size restrictions that have been implemented since the early 90's and how the NRSHA is managed. Mesh restrictions are set by "Emergency Order" (E.O.) that prohibit gillnets with mesh size larger than 5.5 inches until July 21 (Table 8). In addition to mesh restrictions, when commercial fishing in the NRSHA, the fishery is regulated by pulsing commercial periods through part of the flood and into the ebb tide. This allows for unimpeded escapement for a portion of each tide for all salmon species.

During the 2003 December BOF meeting in Anchorage, several regulation changes were adopted concerning the Naknek/Kvichak District. The Kvichak sockeye salmon stock was elevated from a stock of yield concern to a stock of management concern due to the recent chronic inability to meet escapement goals. With this action came the stipulation that if the Kvichak River run is forecasted to be less than 30% above the minimum biological escapement goal (BEG), fishing will begin in the Special Harvest Areas of Naknek, Egegik and Ugashik Rivers (5 AAC 06.360 (h)). In addition to stock status, the BOF also changed the allocation plan for the Naknek/Kvichak District; when fishing in the NRSHA the allocation of fish will be split 84 percent drift 16 percent set gillnet (5 AAC 06.360 (c)).

In 2004, an emergency petition was submitted to the BOF in December to create an inriver setnet fishery in the Alagnak River due to the recent large escapements. The BOF accepted the petition

and met in March, 2005 to discuss a special setnet fishery in the lower Alagnak River. Restrictions in the commercial fishery to protect Kvichak stocks, have resulted in above normal returns to the Alagnak River that have occurred for the past 6 years (Appendix A12). The petition asked the BOF to create a setnet fishery in the Alagnak River in an attempt to harvest some surplus sockeye in the Alagnak River when the Naknek/Kvichak District is closed. The BOF also accepted a petition for placing an optimal escapement goal (OEG) on the Kvichak River with a range of 1.5 to 2.0 million sockeye (lowering the current minimum goal 2.0 million). The BOF passed the inriver set gillnet fishery with restrictions (5 AAC 06.373 Alagnak River Sockeye Salmon Special Harvest Area Management Plan (ARSHA)), however, the OEG proposal failed.

As described previously, the 2005 total run forecast for the Kvichak River fell below the minimum 2.6 million required to open the Naknek/Kvichak District (5 AAC 06.360.(h)). Because the Kvichak forecast was less than 30% above the minimum biological escapement goal of 2,000,000, the Naknek/Kvichak District was closed until further notice on June 1. Commercial fishing could occur only in the NRSHA and/or the ARSHA, when sufficient numbers exist. In addition to the restrictions in the Naknek/Kvichak District, Egegik, and Ugashik Districts were also restricted to their Special Harvest Areas, beginning June 1.

The escapement monitoring projects, i.e., towers for the Naknek, Kvichak, and Alagnak Rivers were all operational during the 2005 season. The Naknek River tower began counting on June 16, the Kvichak River June 20, and the Alagnak River on June 25 (Table 22). Escapement objectives were exceeded in the Naknek and Alagnak Rivers, while the Kvichak River met its escapement goal for the first time since 1999. Escapement in the Naknek River was above historical numbers from the beginning with the total for the first day (June 18) being nearly 5,000 sockeye and the total for June 19 being nearly 13,000 sockeye. The projected daily for June 19 was 3,500 fish. These early escapement numbers are likely due to the lack of fishing in the Naknek/Kvichak District. Typically, the district opens to commercial fishing on a schedule beginning June 1 from 9:00 a.m. Monday through 9:00 a.m. Friday and ending June 23. Based on the early above normal escapements, the NRSHA opened to set gillnet fishing at 11:00 p.m. June 19 for 8-hours. The drift gillnet fleet fished for 5-hours beginning 11:00 a.m. June 20. The catches were small with the set gillnet fleet harvesting 10,500 and the drift fleet approximately 1,400 sockeye. However, that early in the run, harvest was not expected to exceed 15,000 to 20,000 in the NRSHA. Escapement estimates did drop dramatically to less than 1,000 fish a day for 3 days.

The district test boat fished the Naknek Section June 22 on the afternoon tide, 18 drifts harvested a total of 1,036 sockeye (Table 5). The majority of the harvest (97%) came from three sets made in Ships Channel on the west line. The next trip was June 24 fishing the morning flood and results were similar but more dispersed on the west line. Escapement past the Naknek tower rebounded quickly, from the low of 48 sockeye on June 24 to 54,500 on June 25. This early morning movement was observed on the morning tide with the subsistence nets. The NRSHA opened to commercial fishing with drift gillnet gear for 5-hours beginning 4:00 p.m. June 25. The harvest for the period was 85,000 sockeye. While escapement to the Naknek River was picking up significantly, the Kvichak and Alagnak remained quiet. The cumulative escapement through June 25 was 1,850 sockeye for the Kvichak and 12 for the Alagnak. The plan for the NRSHA was to continue fishing each tide; the gear group would be determined based on the allocation split. The set gillnet fleet fished an 8-hour period on June 26 and the drift fleet fished

the next two tides. Sockeye escapement to the Naknek River dropped slightly on June 27 and 28, however, jumped to over 120,000 on June 29. Even fishing every tide in the NRSHA until July 11, escapements remained above 100,000 per day.

The movement of sockeye up the Kvichak River was not as strong as the Naknek River. By July 1, the cumulative escapement estimate for the Kvichak was 194,000 sockeye. The projected escapement was 308,000 based on the most recent (2000–2004) run timing curve. In the Alagnak River, escapements were building and the first inriver set net fishery was soon to occur. The cumulative escapement through July 1 was 320,000 sockeye. With daily escapement increasing, it was announced at 12:00 noon July 1 that the earliest a fishery in the Alagnak River could occur was 1:00 p.m. Sunday, July 3. It was important to have the first opening in the Alagnak River during daylight hours for safety and site staking reasons. Strong escapement into the Alagnak continued and it was announced that the first fishing period in the ARSHA would be at 1:00 p.m. Sunday July 3, for 2.5 hours. These short periods were due to the bathymetry of the ARSHA, wide mud flat and narrow channel. During the first fishing period approximately 30 permit holders participated. No problems arose during the fishery and catches were less than expected with only 25,000 sockeye harvested. In the ARSHA, each tide was fished from July 3 until July 15 when it closed due to lack of participation from the increasing chum percentages.

Escapement into the Kvichak River continued at above expected levels through July 6 when nearly 1 million sockeye had passed the tower. The anticipated cumulative escapement for the same time period was slightly more than 1 million based on the 2000 to 2004 escapement curve and 750,000 based on the 1900–1999 escapement curve. Both curves were projecting the 2.0 million escapement goal would be met, something that had not been seen since 1999. An aerial survey of the Kvichak River on July 9 estimated slightly more than 300,000 sockeye, which projects roughly 1.75 million sockeye through July 11. With escapement almost assured for the Kvichak River, the 6:00 p.m. announcement on July 9 opened the Naknek Section of the Naknek Kvichak District to both set and drift gillnet gear during the morning tide on July 11. The NRSHA was left open to set gillnet gear through July 17. The Kvichak Section opened to set gillnet gear at 4:30 a.m. on July 12 and to drift gillnet gear on the afternoon tide July 12. The 48 hour transfer period was waived at 9:00 a.m. Wednesday, July 13 after the minimum goal of 2.0 million sockeye passed the Kvichak tower. Beginning 9:00 a.m. Monday July 18 the Naknek/Kvichak District went to the fall schedule of 9:00 a.m. Monday to 9:00 a.m. Friday until September 30.

The sockeye return to the Alagnak River was less than the record run in 2004, by nearly 1.0 million sockeye. The escapement of 4,219,026 is the second largest recorded for the Alagnak system. The catch was insignificant to the total run with an inriver harvest of roughly 258,500.

The sockeye salmon harvest for the NK District totaled just over 6.7 million (Appendix A3). The reported commercial harvest of 1,303 Chinook was 37% below the 10-year average harvest of 2,060 (Appendix A4). The chum salmon harvest totaled 197,479 fish, over double the 10-year average of 88,000 (Appendix A5). There was a reported commercial harvest of 3,308 coho salmon in the Naknek/Kvichak District an increase over the 2004 harvest of 2,138 (Appendix A7).

Egegik District

The 2005 run of 9.87 million sockeye salmon to the Egegik District ranks as the ninth largest since 1985, and was approximately 5% below the forecast of 10.38 million. Sockeye salmon runs to the Egegik District during the past 4 comparable cycle years, dating back to 1985, have ranged from 8.0 to 15.7 million fish with an average of 11.24 million. The 2005 run was 12% below the average for recent cycle years (Appendix A13). The most recent 20-year average (1985–2004) for the Egegik run is 9.52 million sockeye. The harvest of 8.00 million was the ninth largest commercial catch for the same 20 year period. An escapement of approximately 1.62 million fish was achieved, which was above the upper end of the BEG of 800,000 to 1.4 million (Appendix A1).

The projected Egegik District harvest of 9.27 million sockeye was 36% of the predicted total Bristol Bay harvest (Table 1). Drift gillnet participation peaked on June 30 with 573 permits registered to fish within the Egegik District (Table 9). At the beginning of the Emergency Order period, June 17, 244 drift permits were registered to fish in the Egegik District and bay-wide, 655 drift permits were registered. This bay-wide total is down from approximately 900 drift permits registered on the same date in 2004, a total which can probably be attributed to the creation of the General District in that year.

Because of a low preseason forecast for the Kvichak River, commercial salmon fishing in 2005 began in the Egegik River Special Harvest Area (ERSHA), and was opened on June 1, but no landings occurred until June 13 (Table 11). Through June 16, the total catch of approximately 42,000 was well above the 20-year average of 29,000. Catches on June 13 and 14 were among the highest on record for those dates, however, catches declined on June 15 and 16 so the fishery was allowed to close as scheduled at 9:00 a.m. on June 16, and was reopened on June 17 for an 8-hour period. On June 19 fishing was opened for 8 hours on the morning tide and then for a 24-hour period beginning at 7:00 p.m. on June 19.

Daily inriver test fishing, which provides estimates of sockeye salmon passage into the lower portions of the Egegik River, began on June 14 at the usual sites just upstream of Wolverine Creek (Table 25). The Egegik River counting tower's first full day of counts was on June 17 (Table 21), providing daily estimates of sockeye salmon passage into Becharof Lake. Initial inriver test fishing catches were low and results through June 18 indicated that approximately 27,000 sockeye salmon were in the river and above the commercial fishing district (Table 25). The tower count was approximately 13,000 through mid-day June 19, slightly ahead of the expected level.

Harvest through June 19 totaled slightly below 100,000 sockeye salmon; or less than 1% of the preseason forecast for the district and was one of the better cumulative harvests through this date. The tower escapement count continued to maintain a pace that was slightly ahead of the expected level. A commercial period was scheduled on June 21 but the catch dropped off to 22,000 fish. Test fish indices also declined and as a result only subsistence fishing was allowed until the afternoon of June 26.

On June 25 counts at the tower dropped to a season low of 870 and the inriver test fishery estimated that an additional 10,000 fish were in the river. Escapement was approximately one to 2 days ahead of the expected level. However, reports from fishers and an aerial survey in the district showed a significant mass of fish just outside the boundaries of the ERSHA, and anticipating a large influx of fish coupled with nearly 5 days of no commercial fishing, a

commercial period was scheduled for Sunday, June 26. Mindful that the run had still not defined itself in terms of abundance and anticipating a substantial amount of effort, a conservative 4-hour drift period was announced with an 8-hour opportunity for the set net gear group. Verbal reports estimated around 950,000 sockeye salmon were caught during this period; approximately 750,000 for the drift net gear group and 200,000 for the set net gear group. This was a record harvest for a 4-hour drift fishery, in terms of catch rate per hour and the highest set net catch on record. Unfortunately, because of inexperienced processing crews, catch in other districts, and this high volume, processing capacity was severely stretched. This had ramifications for the rest of the season as processors struggled to keep pace with the catch throughout Bristol Bay.

Reports from fishers and aerial surveys indicated a continued strong presence of fish in the district and inriver test fish indices plus escapement counts showed slight improvement. Another fishing period was allowed on June 27. On June 28 reports from within the district continued to indicate a strong push of fish. Both the inriver test fishery and escapement tower counts showed improvement and commercial fishing was allowed on June 28 for both gear groups. On the same day, the leading edge of the pulse of fish that had entered the river beginning June 26 began passing the counting tower in significant numbers. Cumulative tower counts went from 1 to 2 days ahead to between 4 and 5 days ahead of anticipated levels in just one day. The catch through June 28 was approximately 2.23 million sockeye salmon.

The escapement of approximately 166,000 sockeye salmon on June 28 was the first of nine consecutive days of escapements that averaged 139,000 fish per day, with a range of 103,000 to 176,000. The lower end of the escapement goal range was reached on June 30.

As the run continued, fishing was allowed for both gear types on a daily basis; however, because of processors operating at or near capacity, most fishers were put on limits at one time or another during the season. The result of this was that the commercial fishery was, at times, having negligible impact on the rate of escapement into the river. Limits were placed on fishers by some companies on June 27 and continued in some measure until essentially the end of the season.

On July 9, the Kvichak River was projected to reach the lower end of its BEG of 2 million sockeye salmon. By regulation, this allowed the commercial fishing boundaries in the Egegik District to move from the ERSHA to include the full district on the morning of July 11. Fishing continued in the full district until the end of the season. The fall fishing schedule of 9:00 a.m. Mondays to 9:00 a.m. to Fridays went into effect beginning at 9:00 a.m. Monday July 18.

The age composition of the 2005 Egegik District sockeye run was as follows:

Age Group	Catch	Escapement	Total
1.2	2.9%	3.4%	2.9%
2.2	35.6%	38.9%	35.9%
1.3	30.2%	25.4%	29.4%
2.3	31.2%	26.9%	30.5%
Other	0.1%	5.4%	1.3%
Totals	100%	100%	100%

Most of the sockeye salmon (36.7%) were 2-ocean fish, age 1.2 and 2.2, and came from the 2000 and 2001 escapements of 1.03 million and 969,000 respectively. Commercial fishers harvested

approximately 83% of the Egegik inshore sockeye run, which matches the recent 20-year average. Peak harvest dates were June 26, and July 1, when approximately 942,000 and 829,000 sockeye were landed. Peak tower counts occurred June 28, and July 3, when over 166,000 and 176,000 sockeye were counted, respectively. Also of note, the 9 days from June 28 through July 6 is the longest sustained period of escapement counts over 100,000 since 1994 (also 9 consecutive days) and is probably the result of two things; 1) processor capacity being fully committed, and 2) fishing in the ERSHA, which is a subsection of the Egegik District and allows less time to recognize and thus manage entry of a pulse of fish that are pressing hard to enter the river. In contrast, the total run to the Egegik District in 1994 was 12.65 million sockeye, and the Bay wide total run was approximately 50.69 million. The total catch in Bristol Bay in 1994 was approximately 36.5 million fish and in 2005 was approximately 26.0 million fish. This serves to underscore the changes in processing capacity within the Bay; with approximately 11 million more fish caught in 1994 and the third highest harvest of the 20-year period from 1985–2004, fishers were not limited in any fashion.

During the emergency order period from June 16 to July 17 in 2005, a total of 255.5 hours were fished by both gear types, which was 43% of the 600 available hours. This compares to 243.5 hours for drift gillnet fishers and 382 hours for set gillnet fishers in 2004. By the end of the emergency order period, set and drift gillnet fishers had harvest allocations of 18% and 82%, respectively (Appendix A9). The allocation specified in regulation is 86% drift gillnet and 14% set gillnet. Because of the large escapements during late June and early July, the need to manage the allocation was secondary to the need to manage the escapement. It should be noted that the limits placed on fishers introduced one more variable into the process of balancing the escapement and allocation against harvest. In 2005, even though the level of fishing opportunity was very high, the inability of industry to adequately keep pace with the level of harvest from around the Bay impacted not only the level of escapements but the allocation between gear groups.

The commercial harvest of other salmon species in the Egegik District was approximately 86,000 fish, or less than 1% of the total harvest. The Chinook harvest was approximately 498 fish, 68 % below the 20-year average of 1,500 (Appendix A5). The district chum harvest of approximately 63,200 fish was 30% below the recent 20-year average of 90,800 (Appendix A6). No pink salmon was reported in the harvest. The coho salmon harvest of approximately 22,000 fish was 37% below the recent 20-year average of 35,000 (Appendix A7).

Aerial surveys were conducted in the Egegik and King Salmon River systems to provide escapement indices for Chinook, chum, and coho salmon. The resulting counts were 550 Chinook, and 1,514 chum salmon. Chinook escapement indices were below average in the streams surveyed. The Chinook salmon index was 49% below the 20-year average while the chum salmon index was 76% below average. The Chinook salmon index was the lowest in the last 10 years and the chum index was the third lowest in 10 years.

Coho surveys were flown in late September and 22,450 fish were observed in the various tributary streams of Becharof Lake. This is the third highest number ever observed during coho escapement surveys of the Egegik system. Survey conditions ranged from good to very poor, turbid water and wind being the cause of very poor ratings.

In summary, the 2005 sockeye salmon harvest at Egegik ranked ninth out of the last 20 years and slightly lower than the latest 20-year average of approximately 8.4 million fish. The run was

approximately 5% below forecast. The midpoint of the escapement was July 2, slightly early run timing when compared to the 20-year average of July 5. Fifteen processors purchased fish in the Egegik District this season. Bay-wide processing capacity became an issue in late June, and most processors imposed catch limits on their commercial fishers for varying lengths of time.

Ugashik District

The 2005 inshore sockeye salmon run to the Ugashik District was approximately 3.00 million fish, or 20% less than the forecast of 3.61 million (Table 1) and ranked thirteenth in the most recent 20-year period (1985–2004). The commercial sockeye catch of approximately 2.20 million fish was also the thirteenth largest harvest for the same period. The sockeye escapement to the Ugashik River was approximately 780,000 fish, or 6% under the midpoint of the BEG range of 0.5 to 1.2 million. Comparable inshore returns over the last four cycles, dating back to 1985, have ranged from 2.17 to 7.45 million fish with an average of 4.6 million, making the 2005 run 13% below the average for the last 4 cycle years (Appendix A14).

The district was opened to a 4 days per week fishing schedule on June 1 by Emergency Order. Initial landings occurred in the district on June 9 (Table 12) when a handful of sockeye and Chinook salmon were delivered. As per regulation, allowing no more than 48 hours of fishing time between June 17 and June 22, commercial periods were scheduled for 12-hours on June 17, 20, 21, and 22. The cumulative harvest through June 22 was approximately 26,000 sockeye salmon. This compares to the 20-year average cumulative harvest, through June 22, of 65,200.

The preseason forecast for the Ugashik District suggested a harvest of 2.76 million sockeye salmon, which would have been the second largest harvest since 1997. Accordingly, commercial fishers were advised that fishing time after June 22 would depend on inriver test fishing results, tower escapement levels, and fishery performance. With this advisory, 23 vessels with drift gillnet permits were registered for the Ugashik District on June 24 (Table 9).

Inriver test fishing, which operates about 3 miles upstream of Ugashik Village, started on June 21 and provided a daily estimate of sockeye passage into the lower part of the Ugashik River. The counting tower project, operating about 24 miles upstream of Ugashik Village, started counting on June 30. The first tower count on June 30 was a partial day's count and totaled approximately 60 fish (Table 21). A pulse of over 170,000 fish entered the river and migrated past the counting tower from July 3 to July 7 putting escapement several days ahead of expected levels. This information, in combination with a small fleet, was used as a basis for scheduling fishing periods from July 2 through July 5. The harvest of approximately 316,000 sockeye recorded over these 4 days brought the cumulative harvest to approximately 972,000 sockeye, which was well above the 20-year average of 242,000 through July 5. Inriver test fishing indices trended downwards from July 5 to July 7 indicating that fewer fish were moving into the Ugashik River, and when combined with the previous pulse of fish, escapement was tracking slightly behind the desired level. The fishery was rested on July 6 followed by consecutive fishing periods scheduled on June 7 and 8. Combined catch from these two periods was approximately 746,000 while escapement counts at the tower project were approximately 193,000 sockeye through July 8.

Inriver test fishing indices climbed again on July 8 and July 9 and a fishing period was scheduled on July 11 and then again on July 13. The lower end of the escapement goal range, 500,000 fish, was surpassed on July 12. The inriver test fishing index on that day represented a downward inflection point followed by a steady decline through the end of the season. Catches held steady

until July 15 when a downward trend in harvest was observed. Fishing time was scheduled based on fishery performance and continuing escapement until July 17 when the fall fishing schedule of 9:00 a.m. Monday to 9:00 a.m. Friday was implemented.

By July 17, the cumulative catch was approximately 1.98 million sockeye salmon. Sockeye landings continued through July and into August with a final catch of approximately 2.2 million (Table 12). The final Ugashik River sockeye escapement count was 780,000 fish when the project ended on July 23. Additionally, about 20,000 sockeye were counted during aerial surveys of the Dog Salmon River (Appendix A14). This number is the highest ever observed in that system and may be the result of high estimates by a new observer and/or the displacement of from the King Salmon River (see Environmental Conditions).

By the end of the emergency order period, set gillnet fishers had caught approximately 13% of the sockeye harvest and drift gillnet fishers took 87% (Appendix A9). The allocation specified in regulation is 90% drift gillnet and 10% set gillnet. Between June 23 and July 17, setnetters fished a total of 138.5 hours, or 75.5 hours less fishing time than they had in 2004, while drift gillnetters fished a total of 110 hours, or 41 hours less fishing time than in 2004. As in the Egegik district, the allocation between gear groups was impacted by limitations in processing capacity and the need to manage escapements over allocation.

The peak escapement counts at the counting towers occurred July 9, 10 and 12, when 89,000, 133,000 and 81,000 sockeye passed the towers. The escapement sex ratio was approximately 52% males to 48% females.

The age composition of the 2005 Ugashik District sockeye salmon run was as follows:

Age Group	Catch	Escapement	Total
1.2	11.2%	15.5%	12.3%
2.2	3.3%	2.0%	2.9%
1.3	70.6%	71.2%	70.7%
2.3	14.5%	8.4%	12.9%
Other	0.4%	2.9%	1.2%
Totals	100%	100%	100%

The commercial harvest of other salmon species was approximately 49,000 fish or 0.2% of the district's total harvest. The harvest of 1,762 Chinook salmon was 9% below the recent 20-year average of 1,938 (Appendix A4). Chinook escapement is assessed by aerial surveys in the Dog Salmon and King Salmon rivers, the major tributaries of the Ugashik River. In 2005, surveys were flown for the whole district but the only observations considered reliable were on sockeye salmon in the Dog Salmon system. Reliability of other surveys is questionable because of a new observer and lack of confidence of that observer in the estimates that were developed during the survey flights.

The chum salmon harvest of approximately 40,315 fish was 37% below the 20-year average of 65,000 (Appendix A5). The coho salmon harvest of approximately 8,200 fish was well below the 20-year average of 19,000 but there was very little directed commercial effort for Ugashik coho salmon in 2005 (Appendix A7). The coho salmon escapement index of 7,400 for the Upper and Lower Ugashik Lakes was the second highest index recorded for the lakes during this time. The timing of this survey was before peak with most coho salmon still schooled up below creek mouths.

One pink salmon was reported in the harvest in 2005 which was an off cycle year for pinks (Appendix A6).

The Ugashik District fishery harvested approximately 73% of the sockeye run into the district, which is above the 20-year average removal rate of 68%. Peak catch occurred on July 9 when 385,000 sockeye were harvested.

Ten buyers operated in the district during the season (Table 27).

Environmental Conditions

An unusual event occurred in the Mother Goose Lake Drainage during the spring or early summer of 2005. A lahar took place on Mt. Chiginigak, a semi-active volcano from which the headwaters of Volcano and Indecision Creeks flow. These creeks provide water to Mother Goose Lake, which in turn is the source for the King Salmon River, a tributary that empties into Ugashik Bay.

A lahar is a volcanically influenced runoff event, and while the mechanics or timing in this case is not clear, the effects were dramatic. Sometime in the spring or early summer of 2005, an event took place on or within Mt. Chiginigak that caused the snow on and within the summit crater to melt and runoff into the Mother Goose Drainage and an unnamed tributary on the Pacific side of the Alaska Range. This runoff is extremely acidic in nature and was of a large enough volume to lower the pH of Mother Goose Lake and the King Salmon River to between 3.0 and 3.5. This condition persisted through most of the summer and into the fall and prevented salmon and other anadromous fish from migrating into the upper reaches of the system. Chinook and chum salmon were observed during aerial survey flights in two tributaries in the lower reaches of the King Salmon River, Pumice, and Old Creeks, but no fish were observed in the King Salmon River mainstem or Painter Creek, a tributary with a confluence just below Mother Goose Lake, or in Volcano or Indecision Creeks. Painter Creek is a major spawning area for Chinook salmon in the Ugashik system.

Long-term ramifications from this event could be significant. At least two and possibly three age classes of salmon were impacted, depending on the timing of the event. The juvenile classes of 2004, which hatched in the spring of 2005, and the 2005 return were definitely affected, but depending on the timing of the lahar, the outgoing age class of the 2003 spawning event (smolts) could have outmigrated before the river was impacted by the acidic runoff. If the runoff ceases or diminishes over the winter, then while impacted, the watershed would become more habitable for all species. If the pH continues to stays low, the ability of the system to support aquatic life will be diminished.

In terms of impacts to the fisheries, estimation of escapement in the King Salmon/ Mother Goose system is done via aerial surveys and the range of estimates is from approximately 4,000 to 30,000 sockeye salmon, with the latest 20-year average of about 15,000. This is a fairly small number when compared to the overall Ugashik District. For Chinook salmon, the system can contribute a significant percentage of the Chinook in the Ugashik District, but the latest 20-year average is only about 2,100 fish in the commercial fishery. A more significant impact would be felt by the sport fishing community since Painter Creek is one of the larger contributors to the that fishery within the Ugashik District.

It is unknown at this time how long the acidic water will be produced and runoff into the King Salmon River/ Mother Goose Lake complex and there is no way to remedy the situation. Staff

from the Volcano Observatory Group, the USFWS Alaska Peninsula National Wildlife Refuge, and ADF&G will continue to monitor the river and document impacts to the watershed through time.

Nushagak District

The 2005 Nushagak District total inshore sockeye salmon run was approximately 10.1 million fish, 37% over the preseason forecast of 7.4 million fish (Table 1). Commercial sockeye harvest, in the Nushagak District, reached 7.1 million, 28% above the preseason projected harvest of 5.6 million sockeye. Total sockeye escapement in the district's three major river systems was 2.96 million or 57% over the combined midrange escapement goal of 1.88 million and all systems exceeded their midrange escapement goals.

Peak Chinook salmon production in the early 1980's resulted in record commercial harvests and growth of the sport fishery. Declining run sizes and the question of how to share the burden of conservation among users precipitated the development of a management plan for Nushagak Chinook salmon. Since its adoption in 1992, the Nushagak-Mulchatna Chinook Salmon Management Plan (NMCSMP) has governed management of the Nushagak Chinook salmon fisheries (5 AAC 06.361). The plan was amended in 1995, 1997, and 2003. The purpose of this management plan is to ensure an adequate spawning escapement of Chinook salmon into the Nushagak River system. The plan directs ADF&G to manage the commercial fishery for an inriver goal of 75,000 Chinook salmon past the sonar site at Portage Creek. The inriver goal provides: (1) a biological escapement goal of 65,000 spawners, (2) a reasonable opportunity for inriver subsistence harvest and (3) a guideline sport harvest of 5,000 fish. The plan addresses poor run scenarios by specifying management actions to be taken in commercial, sport, and subsistence fisheries, depending on the severity of the conservation concern. Management decisions are heavily dependent upon the estimates of inriver Chinook salmon escapement provided by sonar counters located at Portage Creek on the lower Nushagak River.

Trends in age composition of Chinook spawning escapements in 1995 and 1996 raised concerns about the quality of Chinook escapements in the Nushagak River. The proportion of large (age-5 through age-7) fish was less than desired, and the age composition of the escapement during the first half of the run differed substantially from the escapement during the second half of the run. In the early portion of the run, male Chinook salmon of the younger age classes comprised the majority of the escapement, while the older age classes became prevalent in the latter portion of the escapement. Differences in age composition between escapement and total run, and between early- and late-season escapement, result from size-selective harvests. To address this concern, ADF&G adopted a strategy of allowing unfished pulses of Chinook into the Nushagak River before opening a commercial period. Allowing untargeted fish into the river was intended to lessen the effects of selectivity in the commercial fishery while allowing fish with a natural age distribution to enter the river. In November 1997, additional language, directing ADF&G to allow pulses of Chinook salmon into the Nushagak River that were not exposed to commercial fishing gear, was added to the NMCSMP.

ADF&G adjusts commercial fishing time and area to harvest Chinook salmon surplus to the inriver goal. Management decisions are based on the preseason forecast and inseason indicators of run strength, including commercial harvest performance, subsistence harvest rates and inriver passage rates by the sonar. During the last 3 years, managers have used directed Chinook openings in early June to harvest fish when a surplus appears to be available. Because these

openings occur usually during the first third of the run, it allows for the harvest of more parts of the return at a lower level but also has the potential for complicating management if the second half of the return is significantly weaker than the first half. When a surplus is forecasted, early commercial openings provide for more time between openings allowing unfished pulses of fish to move through the district, better quality of fish in the harvest, and harvest spread over a larger portion of the return.

The 2005 Nushagak District Chinook salmon forecast was 243,000 fish. With an inriver goal of 75,000 fish, and average sport and subsistence harvest of 6,000 fish below the counting station, 162,000 Chinook would theoretically be available for commercial harvest. As announced preseason, the 2005 commercial salmon season did start on June 1 in the Nushagak District. An 8-hour directed Chinook opening resulted in the harvest of 689 Chinook salmon from 27 deliveries. The Chinook fishery has not been open on June 1 since 1987, but the large preseason forecast of 243,000 Chinook warranted early openings. The preseason plan was to begin on June 1 and have openings every 2 or 3 days until June 12. This would satisfy the requirements of the management plan for an unfished pulse between directed Chinook openings and would still provide opportunity to harvest some fish. After June 12 all openings would be based on escapement, subsistence, and commercial catch information.

The first Chinook opening resulted in a harvest of 689 fish from 27 deliveries (Table 13). Although there were no expectations for this opening, feedback from the fleet was positive. The second opening on June 3 harvested 295 fish from 19 deliveries. The smaller than expected harvest on the second opening resulted in taking a longer break before the next opening on June 6. That opening harvested 6,600 Chinook with a fleet of 65 vessels. With the preseason guarantee of an opening on June 12, another opening was set for June 9 instead of trying to fit two openings between the 6 and the 12. The June 9 opening resulted in a harvest of 2,000 Chinook from 78 deliveries.

The fifth directed Chinook opening of 2005 was on June 12. The harvest was 6,900 fish from 112 deliveries; escapement at this time was 10,000 Chinook, 3,000 fish ahead of what was expected. The only information that wasn't positive was the poor subsistence harvest. Although Chinook were making it past the sonar station as escapement, subsistence users in Dillingham were not catching what they needed. This was due partly to lack of wind that pushes the fish on to the subsistence beaches and access issues at Wood River that also hampered effort. Because of subsistence concerns the next fishing period was on June 16 for only 3 hours. This period resulted in a harvest of 9,000 Chinook from 152 deliveries, bringing the total harvest to 25,800.

A storm blew through beginning on June 17 and Chinook escapement responded dramatically. The daily escapement for June 18 was 40,000 Chinook, followed by 20,000 on June 19 and 10,000 on June 20. The escapement goal of 75,000 was surpassed on the 19 and the final escapement was 171,101 (Table 23). There was one final directed Chinook opening on June 20, before management focus shifted to sockeye salmon on June 21. The total directed Chinook harvest was approximately 30,000 fish and the incidental harvest of Chinook in the sockeye fishery was approximately 32,000 for a total season harvest of 61,854 (Table 20).

From 1986 to 1998, the Nushagak District sockeye fishery was managed to achieve a biological escapement goal range of 340,000 to 760,000 spawners in the Nushagak River and a range of between 700,000 to 1.2 million spawners in the Wood River. The BOF modified the Wood River Special Harvest Area Management Plan in March of 1999 to include language that directed

ADF&G to manage the Nushagak River for an OEG of no less than 235,000 sockeye when the ratio of Wood River to Nushagak River sockeye was projected to be greater than 3:1. This OEG was adopted by the BOF for the 1999 and 2000 seasons to give "economic relief" to the Nushagak District permit holders by allowing a higher exploitation rate on the stronger Wood River sockeye stock in the district. The plan was modified again in January 2001 to allow for a "variable" escapement goal for the Nushagak River and for a change in the Wood River escapement goal range to 0.7 to 1.5 million with a midrange goal of 1.1 million. This mandated that managers use the 340,000 minimum goal when the preseason forecast for the Nushagak River was greater than 1 million sockeye and use the 235,000 OEG minimum when the preseason forecast was less than 1 million sockeye. ADF&G was required to reevaluate the Nushagak return during the first week of July and adjust the escapement goal accordingly if the projection changed from the preseason forecast. The 2005 preseason forecast for the Nushagak River was 1.7 million sockeye, therefore, the Nushagak River would be managed for the BEG range of 340,000–760,000 spawners at least until the run was reassessed in early July.

The preseason forecast for the inshore sockeye run to the Nushagak District totaled 7.4 million fish (Table 1), which was 21% higher than the 20-year average actual run of 6.1 million sockeye (Appendix A15). Strength of the forecasted Wood River run (5.0 million) was 38% above the 1985–2004 average actual return, while the Nushagak River sockeye run (1.7 million) was expected to be 13% greater than the 20-year average actual return. The forecasted return to Igushik River (0.7 million) was 35% less than the 1985–2004 average return of 1.08 million (Appendix A16).

It is not possible to manage Nushagak and Wood River stocks independently in the commercial district because run timing and migratory routes overlap. The Wood River Special Harvest Area Management Plan was adopted in 1996 as a means to conserve coho salmon in the district while continuing to harvest surplus sockeye salmon in the Wood River. The regulatory framework of the WRSHA plan was used by ADF&G in an emergency regulation during the 1997 season for sockeye management due to a large disparity in run strengths between Wood and Nushagak River sockeye salmon stocks. The BOF formally modified the plan in November 1997 to provide a stock specific management tool to target Wood River sockeye salmon. The plan allows managers to open the Wood River Special Harvest Area for the conservation of Nushagak River sockeye salmon. The Nushagak River sockeye escapement peaks slightly earlier than escapement in Wood River. If stock proportions in the escapement represent stock abundance in the district and harvests are not stock selective, delaying the sockeye openings should help to conserve the Nushagak stocks. However, without an additional stock-specific means to exploit Wood River sockeye, surplus Wood River sockeye cannot be harvested without sacrificing the Nushagak River escapement goal particularly when the Wood River run is on the order of three (or greater) times as large as the Nushagak River run.

For at least the last sockeye life cycle, Wood River runs have been more than three times larger than Nushagak River runs due to high production in the Wood River system and decreased production in the Nushagak River system. Throughout these years, ADF&G has attempted, relatively unsuccessfully, to keep sockeye escapement in the Wood River from exceeding the upper end of the escapement goal range, while simultaneously attempting to achieve at least the lower end of the BEG range in the Nushagak River. A ratio of 3:1 (Wood River to Nushagak River sockeye) was forecast for 2005. To conserve Nushagak stocks, the ADF&G plan was to limit commercial fishing time early in the sockeye run. In accordance with the "variable"

escapement goal for the Nushagak River and based on the preseason forecast, ADF&G was managing for the BEG range of 340,000–760,000 sockeye in the Nushagak River while attempting to keep the Wood River sockeye escapement below 1.5 million, the recently adopted upper end of its BEG range.

The sonar project for the Nushagak River was operational on June 8, and the counting project on the Wood River was in operation on June 19. Increasing sockeye escapement, 87,000 cumulative in the Nushagak through June 20, prompted managers to switch from Chinook management to sockeye management (Table 23). The large escapement of Chinook made gear restrictions for Chinook conservation unnecessary so there was no mesh restriction for any openings after June 20. The first openings were 8 hours for the set net fleet and 4 hours for the drift fleet (Table 8). The south line was also changed back to Etolin Point to Nichols Hills from the expanded Chinook District. There was no fishing on June 22, but starting June 23 there was some fishing everyday until July 27. The fishing schedule gradually increased as escapement in the Nushagak River continued to be ahead of expectations. By June 26 the drift fleet was fishing two periods a day with the periods lasting between 4 and 6 hours. The set net fleet started fishing 20–21 hours a day on June 26.

The cumulative sockeye escapement in the Nushagak River on June 28 was 340,000. This is above the lower end of the escapement goal range and meant that there was no need to consider a Wood River Special Harvest Area opening in 2005. The escapement in the Wood River was 268,000, substantially ahead of expectations (Table 22). Managers had been allowing quite a bit of fishing time in the hopes of slowing down escapement. The escapement did slow down on June 28, so managers decided to skip one tide with the drift fleet and allow the district to fill up with fish in the hopes of addressing the rapidly skewing gear group harvest ratios. Therefore, there was no drift fishing during the morning tide of June 30. Cumulative harvest through June 29 was approximately 1.6 million.

Weather conditions deteriorated on the afternoon of June 29. Wind increased and the Ekuk processing plant instructed its permit holders to stop fishing. The wind continued to increase and in a survey of the district on the morning of June 30, it was apparent that weather severely hampered fishing, especially set net efforts. In fact, there was one sunken set net skiff observed and there were reports of another sunken skiff. In addition, at least one drift vessel was reported to have beached itself to avoid sinking. The poor weather continued into the afternoon of June 30 but with the weather came strong catches.

The Peter Pan cannery suspended buying for part of the day on July 1. The cannery had a fire earlier in the week that damaged its power distribution apparatus and disrupted operations. They managed to buy fish until July 1 when catches increased and they were no longer able to keep up. Peter Pan did get their cannery running by the afternoon of July 1 and were able to begin buying again. Ekuk and Peter Pan support the vast majority of the set net fleet and with both of those companies not operating for 12–24 hours it was impossible to improve the harvest ratio between set and drift gear users.

The severe weather also dramatically impacted the escapement in the Nushagak and Wood Rivers. The escapement into the Wood River on July 1 was 328,000 bringing the cumulative to 737,000, exceeding the lower end of the escapement goal range of 700,000. The July 2 escapement of 172,000 was also significant. The Nushagak River sockeye escapement on July 1 was 242,000 bringing the cumulative to 628,000, well above the midrange goal of 550,000. The

July 2 escapement of 169,000 increased the total escapement to above the 760,000 upper end of the range. Catch also increased and the cumulative harvest through July 2 was 3 million.

With the escapement in the Nushagak above the upper end of the escapement goal range, additional fishing time for the drift fleet was necessary to control escapement. After having the drift fleet sit out one tide on June 30, they continued fishing every tide for 8 or 9 hours with a 3–5 hour break between periods until July 6. The set net fleet was fishing until further notice. On July 6, the first drift opening was only 6 hours, and the second was 8 hours. Harvests increased on July 6 and by the morning of July 7 processing companies were announcing suspensions or limits to their fleets. The fishing continued to be very good for the next several days and despite additional fishing time escapements also increased. The cumulative harvest through July 5 was 4.3 million.

On July 6, managers announced the 1:00 a.m. to 9:00 a.m., and 1:00 p.m. to 9:00 p.m. schedule. This schedule increased flood fishing time, which managers had previously tried to minimize. Over the next several days, the strong harvests continued and processing companies continued to suspend buying or limit harvests by their fleets. The cumulative harvest had reached 6.6 million by July 14. The limits and suspensions prompted managers to keep the same 8-hour period, twice a day fishing schedule until July 17. On July 9, the midrange of escapement goals was surpassed on all rivers and the 48-hour transfer period was waived. After July 17, fishing was extended until July 27 but the catch rates were much slower and effort decreased. After July 27 there were 36 hours of fishing per week for coho, broken up into 2 or 3 days based on market desire.

Set gillnet only fishing in the Igushik section began on June 17 and was opened for 8 hours. These openings continued on nearly a daily basis with some variation until July 4 when openings were twice a day. The poor performance of the Igushik stock in 2004, the relatively low forecast of 0.7 million sockeye, and the failure to meet the lower end of the escapement goal range in two of the last 3 years prompted managers to adopt a cautious approach for the 2005 season. Managers used harvest information from the set net fleet, aerial surveys of the river below the towers, and the tower counts to keep close account of the Igushik sockeye run. The run seemed slow and erratic early on but strengthened in early July. This strengthening was sustained for several days giving managers reason to increase fishing time for set nets and eventually allowing some drift gillnet fishing in the Igushik Section beginning July 8.

The final harvest percentages in the Nushagak District were 84% drift, 14% Nushagak Section set, and 2% Igushik Section set (Appendix A9). The sockeye salmon escapement into the Igushik River was 365,700, above the upper end of the escapement goal range. The Nushagak sockeye salmon escapement was 1,096,000 also over the upper end of the escapement goal range. The Wood River sockeye salmon escapement was 1.50 million, right at the upper end of the escapement goal range. The total sockeye salmon harvest in the Nushagak District was 7.1 million, the third largest harvest in the history of the Nushagak District (Appendices A15 and A16).

The Nushagak Coho Salmon Management Plan (5 AAC 06.368) established spawning and inriver escapement goals and provides guidance to ADF&G in managing sport, subsistence, and commercial fisheries that harvest coho salmon. The plan directs ADF&G to manage the commercial fishery in the Nushagak District to achieve an inriver run goal of 100,000 coho salmon in the Nushagak River. The inriver run goal provides for a biological escapement goal of

90,000 spawners and 10,000 additional fish for upriver sport and subsistence harvests. The coho plan directs ADF&G to close "the directed coho salmon commercial fishery" by July 23 when the total inriver run in the Nushagak River is projected to be less than 100,000 but at least 60,000 coho. In 2005, the sonar project on the Nushagak River ceased operation on July 17. Since there was no information to apply the management plan, to managers adopted a conservative fishing schedule of 36 hours per week. This was broken up in two 18-hour periods for the first 2 weeks and then at the request of the only large buyer, three 12-hour periods per week were allowed. Effort in the commercial fishery was limited with a high of 22 deliveries in one period. Final reported commercial harvest of coho salmon was approximately 43,000 fish (Table 13; Appendix A23).

Togiak District

The 2005 inshore sockeye run of approximately 623,000 fish was the thirteenth largest run returning to the Togiak District in the last 20 years (Appendix A17) and exceeded the preseason forecast by 31%. District sockeye harvest was approximately 463,000 salmon, the ninth largest since 1985. Escapement into Togiak Lake was 149,178, at the middle of the Biological Escapement Goal (BEG) range (100,000–200,000).

The Togiak District is managed differently than other districts in Bristol Bay. This district uses a fixed fishing schedule of 3 days per week in the Kulukak Section, 4 days per week in Togiak River Section, and 5 days per week in the Osviak, Matogak, and Cape Peirce Sections. The Togiak District Salmon Management Plan (TDSMP) adopted by the BOF in January 1996 added 36 hours to the weekly schedule for the Togiak River Section between July 1 and July 16. This schedule is adjusted by emergency order, as necessary, to achieve desired escapement objectives. In addition, the TDSMP restricts the transfer into the Togiak District by prohibiting permit holders that fished in any other district from fishing in the Togiak District until July 24. Conversely, it prohibits permit holders that have fished in the Togiak District from fishing in any other Bristol Bay district until July 24.

The 2005 inshore run to the Togiak River was forecasted at 388,000 sockeye salmon (Table 1), of which 75% were projected to be 3-ocean fish, the remaining 25% were predicted to be 2-ocean fish (Table 2). With a midpoint escapement goal of 150,000 sockeye for Togiak Lake, approximately 238,000 sockeye would potentially be available for harvest in the Togiak River Section. A harvest of this size would have been 53% of the 20-year average. Smaller sockeye runs to other drainages in the district (primarily the Kulukak River) occur, but these are not included in the preseason forecast because age composition and escapement data are not complete. Unofficially, a contribution of 56,000 sockeye to the district harvest was projected from drainages other than the Togiak River.

As for Chinook salmon in the Togiak District, no formal forecast is issued. Recently, Chinook run strengths district-wide have declined from a high of almost 52,000 in 1985, to a low of less than 18,000 in 2002 (Appendix A20). Chinook escapements in the Togiak River drainage fell short of the escapement goal (10,000) from 1986 through 1992. The Chinook escapement goal was reached from 1993 to 1995 with extensive commercial fishing closures and mesh size restrictions. In 1996, with only minor reductions in the weekly fishing schedule, Chinook escapement again fell short of the goal. The Chinook escapement goal in the Togiak River has been achieved regularly since that time. Reducing the weekly schedule to 48 hours per week in

late June seems to provide a good balance between commercial fishing time and closures that allow Chinook escapement to be achieved.

The management strategy for Chinook salmon the last 9 years has been to reduce the weekly fishing schedule in sections of the Togiak District during the last 2 weeks of June. The Kulukak Section was reduced to 48 hours of fishing time to decrease the exploitation of Chinook salmon. In the Togiak River Section, the regularly scheduled periods were reduced by 24 hours. The western sections, Cape Peirce, Osviak, and Matogak, remained open for the regularly scheduled periods.

Commercial fishing opened in the district with a regular weekly schedule on June 1. However, the first landings of the 2005 season were made on June 8 (Table 15). In the first 2 weeks of the season, 50 Chinook salmon were caught. The week of June 13 was the first of the season to which the reduced schedule was applied. The commercial harvest and effort for this week was below average with 1,275 Chinook salmon, but contained the largest daily catch of the season. The largest daily catch occurred on June 27, when 1,103 Chinook were harvested.

The fishery was reopened on June 27 and was reduced using a split schedule. The season's cumulative catch after the last delivery on Wednesday, June 29 was 3,366 Chinook salmon. Although this is lower than average, it is the largest catch for this time period in the last 6 years. The close of fishing on June 30 marked the end of active management for Chinook salmon. Fishing reopened Saturday, July 2 with the focus on sockeye salmon management.

The total Chinook harvest for the Togiak River Section was 9,500 fish (Table 16), with an additional 600 caught in the remainder of the Togiak District (Tables 17–19). The total number of Chinook salmon caught in the Togiak District was 22% higher than the 10-year average. Escapement for the Togiak River and tributaries was above the aerial survey goal of 10,000 sockeye with a survey count of 10,188. An estimated 900 Chinook migrated into the Kulukak River and an additional 2,000 fish were estimated in the Quigmy, Osviak, Matogak, Slug, Negukthlik and Ungalikthluk Rivers. Commercial exploitation of the Togiak River stock was 48%; the district-wide commercial exploitation rate was 44%. Figures are not yet available for sport or subsistence harvests so the preliminary exploitation rates do not include those numbers. District-wide escapement was 13,500, 7% higher than the 20-year average (Appendix A20.) Total run size was 24,000, which is 110% of the 10-year average and 98% of the 20-year average.

Commercial fishing for sockeye opened with the regularly scheduled fishing periods on June 1. Fishing effort remained below average during the following week. The first deliveries of the season occurred on June 8.

As mentioned above, the last 2 weekly fishing periods in June for the Togiak River and Kulukak sections were reduced for Chinook conservation. After July 1, regularly scheduled fishing periods in the Kulukak Section were reduced to 48 hours for conservation of Kulukak River sockeye. This reduction has become common practice in recent years due to a shift in effort to the Kulukak Section and conservation concerns for the Kulukak River sockeye stock. By the end of June, the District sockeye harvest was 31,000 fish, which is average and slightly ahead of expected levels.

Operation of the Togiak counting towers began on July 2 with a count of 1,068 sockeye. Commercial fishing reopened on July 4 as scheduled. The Kulukak Section remained on a

reduced schedule for the conservation of Kulukak river sockeye salmon. Permit holders were advised to listen early each week for potential changes in the fishing schedule for the Togiak Section. Both cumulative catch and escapement were stronger than expected for this time. Therefore, the Togiak fleet fished the normal schedule closing on July 9. By July 9, the cumulative escapement past the towers was 25,674 sockeye (Table 23). The total harvest by July 9 was 195,000 with the majority caught in the preceding week.

As in the previous week, when fishing commenced on Monday July 11, the Kulukak Section was reduced to 48 hours and the Togiak Section was on "stand-by". By the afternoon of July 15, escapement past the towers on the Togiak River was over 37,000 sockeye and catch was reported to be over 300,000. The Togiak River Section closed on Saturday, July 16 at 9 pm, after which, the schedule reverted to the normal schedule closing 9 am Fridays.

For the week of July 18, the Kulukak Section was reduced to 48 hours and the Togiak Section was once again on "stand-by". By July 21, escapement had fallen behind the expected cumulative escapement curve with a cumulative count of 72,000 sockeye. Catch in the district was strong with almost 400,000 fish. Although escapement was slightly behind schedule, catch was strong, suggesting continued fish entry. Escapement was on track to fall within the BEG range. Therefore, the district closed as scheduled Friday, July 22.

By regulation, the Togiak District opens to all permit holders on July 24; however, the district was not open to fishing until Monday, July 25. Although there seemed to be a lot of interest in fishing there, deliveries did not increase. There are no requirements for registration after July 24 so increased effort is difficult to assess.

Fishing reopened on July 25 in all sections, however the Togiak Section was once again placed on "stand-by". The last deliveries from the Kulukak Section were made July 25 because it was the last day of tender service in the area. The season total for the Kulukak Section was approximately 54,000 sockeye (Table 17).

By Wednesday, July 27, the escapement past the Togiak counting tower was over 87,000. Although the escapement remained on track to finish within the range of the BEG, the Togiak Section of the Togiak District closed 24 hours early for the conservation of sockeye salmon returning to the Togiak River to ensure adequate escapement. At this time, the only buyer also ceased buying for the season.

The counting towers ceased operations August 7 after counting a season total of 149,178 sockeye.

On Monday, August 8, the district opened on the full schedule that would dictate the remainder of the season. The 2005 sockeye harvest in the Togiak District was over 463,000 sockeye, 42% of the expected amount available for harvest.

There was no directed coho fishery in the Togiak District this year. Parent year escapement in 2001 was based on incomplete aerial survey data. Final operations reports from processors indicated that there were eight coho salmon caught by the last day of fishing, July 28 (Table 15). Due to poor survey conditions and flight availability problems, the Togiak District was not surveyed to assess coho escapement in 2005.

The 2005 sockeye harvest in the Togiak District was 463,500, the ninth highest in the past 20 years (Appendix A3); the total sockeye salmon run also ranked 12th among the last 20 years (Appendix A18). Commercial Chinook harvest was 110% of the 10-year average, while harvest

of chum and coho were 97% and 4% respectively of the 10-year averages (Appendices A20, A21, and A24). Although aerial surveys to assess escapement on the Togiak River were late and compromised by weather, 6,600 sockeye were observed in addition to the 149,178 sockeye that were counted at the towers below Togiak Lake. Therefore, total escapement in the Togiak District was 159,491, which is sufficient escapement. No sockeye surveys were conducted for the Kulukak River. Aerial spawning ground surveys for Chinook salmon exceeded the Togiak River drainage goal of 10,000 with a count of 10,188. No Coho salmon escapement surveys were conducted in 2005 due to weather.

2005 SUBSISTENCE SALMON FISHERY

In spite of numerous social, economic, and technological changes, Bristol Bay residents continue to depend on salmon and other fish species as an important source of food. Residents have relied on fish to provide nourishment and sustenance for thousands of years. Subsistence harvests still provide important nutritional, economic, social, and cultural benefits to most Bristol Bay households. All five species of salmon are utilized for subsistence purposes in Bristol Bay, but the most popular are sockeye, Chinook, and coho. Many residents continue to preserve large quantities of fish through traditional methods such as drying and smoking, and fish are also frozen, canned, salted, pickled, fermented, and eaten fresh.

Final information about subsistence salmon harvests for the Bristol Bay Area for 2005 was not available when this report was published. This information will be included in future annual management reports.

REGULATIONS

Permits are required to harvest salmon for subsistence purposes in Bristol Bay. Since 1990, under state regulations, all Alaska State residents have been eligible to participate in subsistence salmon fishing in all Bristol Bay drainages (but see below). In 2005, with two exceptions, only gillnets were recognized as legal subsistence gear. In the Togiak District, spear fishing was also allowed. In 1998, BOF adopted new regulations for the taking of "redfish" (spawned sockeye salmon) in portions of the Naknek District. Gillnets, spears, and dip nets may be used along a 100 yard length of the west shore of Naknek Lake near the outlet to the Naknek River from August 20 through September 30; at Johnny's Lake from August 15 through September 25; and at the mouth of the Brooks River from October 1 through November 15. In the Bristol Bay Area in 2005, gillnet lengths were limited to 10 fathoms in the Naknek, Egegik, and Ugashik rivers, Dillingham beaches, and within the Nushagak commercial district during emergency openings. Up to 25 fathoms could be used in the remaining areas, except that nets were limited to 5 fathoms in the special "redfish" harvest areas in the Naknek District.

In Dillingham and the Naknek, Egegik, and Ugashik rivers, subsistence fishing was limited to several fishing periods per week during the peak of the sockeye run. All commercial districts were open for subsistence fishing during commercial openings. In addition, all commercial districts were open for subsistence fishing in May and September, from Monday to Friday. In recent years, declining Chinook and coho stocks resulted in longer commercial closures and some residents had an increasingly difficult time obtaining fish for home use. The Nushagak commercial district, starting in 1988, has been opened for subsistence fishing by emergency order during extended commercial closures.

ADF&G issues Bristol Bay subsistence salmon permits to any Alaska resident who requests one. In 2001 the superintendent of Lake Clark National Park and Preserve, announced that the National Park Service (NPS) was prohibiting subsistence fishing with nets in the park and preserve, including all of Lake Clark, except by federally qualified local rural residents. This prohibition was a new enforcement action of a NPS regulation and applied to anyone who was not a permanent resident of Iliamna, Lime Village, Newhalen, Nondalton, Pedro Bay, or Port Alsworth, or who did not have a Section 13.44 subsistence use permit issued by the park superintendent. ADF&G informs Bristol Bay subsistence salmon permit applicants that they need to take this NPS closure into account if they intend to subsistence fish in waters of the park and preserve.

INSEASON MANAGEMENT

Due to extended closures to the commercial fishery in the Nushagak commercial fishing district, emergency orders opened the Nushagak commercial fishing district to subsistence salmon harvesting from 8:00 p.m. June 1 to 8:00 p.m. June 2, 2005; from 8:00 pm. June 3 until 8:00 a.m. June 6; from 8:00 a.m. June 7 to 8:00 a.m. June 9; from 8:00 a.m. June 10 to 8:00 a.m. June 12; from 8:00 a.m. June 13 to 4:00 a.m. June 16; and from 3 p.m. June 16 to 6 a.m. June 20. With limited commercial fishing occurring, the Nushagak commercial district was open to subsistence salmon fishing until further notice on August 2, 2005.

An emergency order opened the subsistence harvest of salmon in the Dillingham beaches area from the dock at Dragnet up the west shore of the Wood River to Red Bluff, down the east shore of the Wood River to the mouth, up the Nushagak River to Lewis Point, and down to Nushagak Point every day from July 2 to July 17. This action took place because the Wood River subsistence fishery was not accessible by a boat launch at the Wood River, causing subsistence fishers more difficulty accessing traditional fishing areas and raising safety concerns. Allowing fishing every day instead of 3 days per week provided subsistence fishers with more access during safe weather.

Due to an extended closure to the commercial salmon fishery in the Togiak District, the commercial fishing district was opened to subsistence fishing by emergency order from 4:00 p.m. June 23 until 9:00 p.m. June 26, 2005. Subsistence fishing opportunities were available in correspondence with commercial fishing openings in the district for the remainder of the season.

An emergency order opened the Naknek Section of the Naknek/Kvichak District to subsistence salmon fishing from 12 noon June 19 until 9 a.m. June 23, 2005. The Naknek River Special Harvest Area was opened to commercial salmon fishing, and to alleviate potential gear conflicts, subsistence fishing was allowed in the Naknek Section. Another emergency order opened the Naknek Section to subsistence fishing to a schedule of two 24-hour periods per week from 9:00 a.m. Saturday to 9:00 a.m. Sunday and from 9:00 a.m. Tuesday to 9:00 a.m. Wednesday, beginning June 25. Because the minimum escapement goal of 800,000 sockeye was assured, an additional 24-hour period for the subsistence fishery was authorized, beginning 9 a.m. on July 2, from 9 a.m. Thursday to 9 a.m. Friday. An emergency order opened the Naknek River to continuous subsistence fishing effective July 13, 2005. The escapement into the Naknek River had exceeded the optimum escapement goal (OEG) and the commercial fleet had moved into the Naknek/Kvichak District.

In the Egegik District, an additional subsistence fishing period was opened by emergency order when the commercial fishery was closed, from 10 a.m. June 15 until 10 p.m. June 16. ADF&G

had been informed that some Egegik residents were having difficulty obtaining subsistence fishing locations within the district when the commercial fishery was open. The emergency order provided subsistence fishing time during a commercial closure. Additional subsistence openings in the Egegik District were established by emergency orders from 5 p.m. June 17 until 5 p.m. June 18; 7:00 p.m. June 19 until 7 p.m. June 20; 8 p.m. June 21 to 12:00 p.m. June 26; and from 3 a.m. June 27 until 12:00 p.m. June 27.

There were no emergency orders issued for the Ugashik District in 2005.

PERMIT SYSTEM AND ANNUAL SUBSISTENCE HARVEST

A permit system was gradually introduced throughout the Bristol Bay region in the late 1960s to document the harvest of salmon for subsistence. Much of the increase in the number of permits issued during these years reflects: 1) a greater compliance with the permitting and reporting requirements, 2) an increased level of effort expended by ADF&G in making permits available (including a local system of vendors), contacting individuals, and reminding them to return the harvest forms, and 3) a growing regional population. Most fishermen are obtaining permits and reporting their catches, and overall permit returns have averaged between 85% and 90%. However, fish removed for home use from commercial catches are not included in most reported subsistence harvest totals. In addition, fish caught later in the season, such as coho and spawning salmon are probably not documented as consistently as Chinook and sockeye.

As noted, final subsistence harvest estimates for 2005 were not available at the time this report was published. Appendices A29, A30, and A31 provide harvest estimates by district and species for the 20-year period from 1985 through 2004 plus the recent 5-year average harvests prior to 2005.

2005 BRISTOL BAY HERRING FISHERY

This report reviews stock assessment activities, provides an overview of the Togiak District herring fishery from 1978 to 2004 and summarizes the 2005 season.

The Bristol Bay area includes all waters south of a line, extending west from Cape Newenham, east of the International Date Line in the Bering Sea and north of a line extending west from Cape Menshikof. The Bristol Bay area is divided into three herring fishing districts. The Bay District; including all waters east of the longitude of Cape Constantine, the Togiak District; including all waters between the longitude of Cape Newenham and the longitude of Cape Constantine, and the General District; including all waters west of the longitude of Cape Newenham. Togiak District spans approximately 192 km (Figure 2). Togiak village lies at the center of the district, 108 km west of Dillingham.

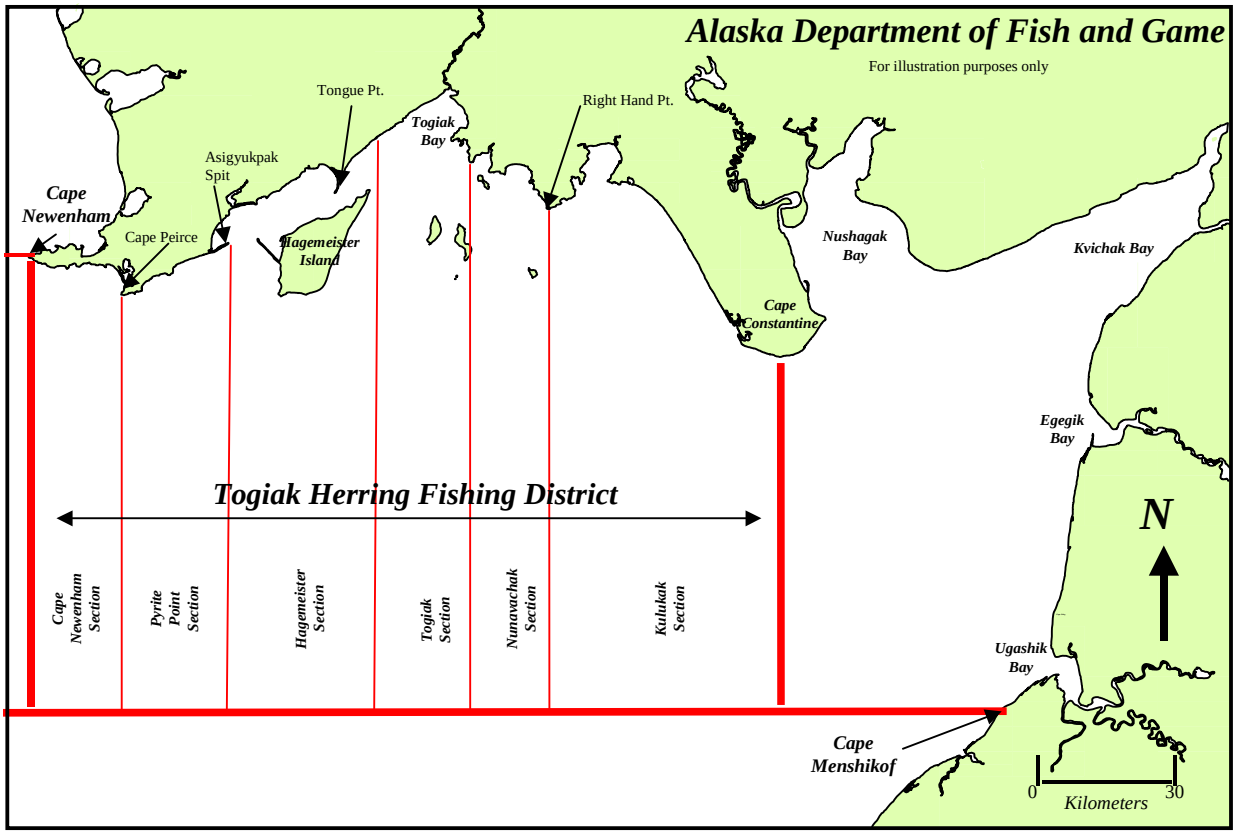

Figure 2.–Togiak Herring District, Bristol Bay.

Pacific herring (*Clupea pallasii*) have been documented throughout Bristol Bay, but the major concentration returns to the Togiak area each spring to spawn and is the focus of herring sac roe and spawn-on-kelp fisheries. In the Togiak District, herring are commercially harvested for sac roe using gillnets and purse seines while herring spawn on rockweed kelp *(Fucus spp.)* is harvested by hand.

The herring sac roe fishery began in the Togiak District in 1967, followed by the first fishery for spawn on kelp in 1968. Effort and harvest levels remained low for the first 10 years of the fishery. Increased interest, favorable market conditions, and additional incentives provided by

the Fishery Conservation and Management Act of 1976 (the 200 mile limit) resulted in a rapid expansion of the Togiak herring fishery in 1977.

The Togiak herring fishery is the largest in Alaska. From 1985 to 2004, sac roe harvests averaged approximately 20,000 tons, worth an average of $7.3 million annually (Appendices B2 and B6). Spawn-on-kelp harvests, which have occurred in only 4 of the last 10 years, have averaged 258,000 lbs., worth about $302,000 to permit holders (Appendices B4 and B6). In 2005, sac roe harvests brought $2.98 million to permit holders, the third highest value since 2000. No spawn-on-kelp fishery occurred in 2005.

STOCK ASSESSMENT

Since 1978, ADF&G has conducted aerial surveys throughout the herring spawning migration to estimate abundance, timing and distribution of Pacific herring in the Togiak District. Surveys are conducted regularly from mid April through May each year. Once herring are observed, surveys are conducted daily, weather permitting, until commercial fishing is completed.

Aerial survey techniques used in Togiak have remained largely unchanged since 1978 and are described in Lebida and Whitmore (1985). Herring school surface area is estimated through a handheld tube with a measured grid and a known focal length from a known altitude. Standard conversion factors of 1.52 tons (water depths of 16 ft or less), 2.58 tons (water depths between 16 and 26 ft), and 2.83 tons (water depths greater than 26 ft) per 538 ft^2 of surface area are applied to herring school surface areas to estimate the total biomass observed during each flight.

Volunteer test fisheries, originally implemented by ADF&G to estimate roe quality, provide samples for age, size, and sex composition analysis. Samples are also collected from commercial harvest for age composition and size analysis. After the season, results are sometimes used to revise biomass estimates.

The status of the Togiak herring population is considered relatively stable. Annual biomass estimates range from 83,000 tons in 1991 to 193,800 tons estimated in 1993 (Appendix B5). Abundance was estimated to be high in the late 1970's, declined in mid 1980's and remained relatively low and stable through 1991. Biomass levels from 1992 to 1994 increased to levels between 150,000 and 200,000 tons and estimates since 1995 range from 121,000 to 157,000 tons estimated after the 1999 season.

From 1985 to 2005, herring were generally first observed in the district in late April or early May, but were observed entering near shore areas as early as April 19 and as late as June 3. Biomass typically increases rapidly and peaks within 1 to 7 days of the first observation. In recent years, it has been difficult to get good surveys during the peak of the harvest; in 2002, the peak survey occurred after the fishery was completed. The herring run appears to be more protracted with lower peak biomass estimates but more herring around for a longer period. Except for 3 years, spawn was first observed any time within 3 days of the first herring observation. Spawning trends differ slightly from those observed for biomass, spawning in all but 2 years accelerated rapidly, peaked from 1 to 4 days after the first occurrence of spawn, spawning continued for a month generally but in less intense spot spawns. Small “spot” spawns have been observed as late as June 14.

Herring ages 2 through 20 have been observed in the Togiak District but herring generally recruit into the fishery at age 5. Herring abundance is related to year class survival. Two major recruitment events have occurred since the State began monitoring the biomass in 1978. The

1977 and 1978 year classes recruited into the fishery in 1982 and 1983 and comprised a substantial component of the biomass until the early 1990's. Other lesser recruitment events have occurred since that time with the most recent being in 1996 and 1997 appearing as age-9 and age-8 herring in the 2005 season.

SAC ROE HERRING FISHERY OVERVIEW

Fishing and Industry Participation

Unlike most herring fisheries in Alaska, the Togiak sac roe fishery is not a limited entry fishery. Gillnets, purse seines and hand purse seines are legal gear. Since fishing effort is not limited, effort levels can vary substantially each year. Herring market conditions are one of the leading factors influencing effort in a given year, but other factors also influence fleet size. Since the majority of herring permit holders in Togiak participate in other fisheries like Bristol Bay salmon, the health of the salmon market and markets for other fish indirectly affect effort in the herring fishery. Herring prices paid to permit holders the prior year and run timing also affect effort. In the last 5 years, processors have developed cooperative fleets for the purse seine fishery. Processors in conjunction with the coop members exclude entrants into the fishery. This is beginning to happen in the gillnet fleet as well.

Fishing effort in the sac roe fishery increased through the late 1980's, decreased early in the 1990's, then increased again to a peak in 1996 and has declined since 1997 (Appendix B1). Gillnet effort increased to 320 vessels in 1989, declined to a low of 75 vessels in 1993, and then peaked in 1996 with 461 vessels and has since declined to a low in 2004 of 54. Purse seine effort increased steadily from 1978 through 1989, when 310 vessels were observed. From 1990 to 1997, the purse seine fleet has fluctuated between 200 and 300 vessels, and has declined to less than 100 vessels since 1998. In 2004, the total number of purse seines was 31, an all-time low.

Reduction in fleet size has led to the development of cooperative seine fisheries that focus on fish with high quality roe rather than on quantity. Reduced fleet size has led to changes in the way the fishery is managed; because fishing is less aggressive, managers can allow 12 hour openings leading to increased selectivity and smaller sets.

Industry participation in the fishery peaked between 1979 and 1982, when 33 processors participated in the herring fishery. From 1987 through 1997, 16 to 22 companies have purchased herring or spawn-on-kelp in Togiak. Over the past 6 years, industry participation has steadily declined to a low in 2004 of six companies. Processing capacity on the grounds has also declined from a high of 4,850 tons per day in 1996 to a low in 2003 of 1,920 tons per day.

Gear Specifications

The BOF has reduced gear to limit harvesting capacity and control problems with waste. Prior to 1989, gillnet length was restricted to 150 fathoms. Each permit holder was restricted to the use of one legal limit of gear, but up to 300 fathoms could be operated from a fishing vessel. Under these gear allowances, lost and abandoned nets accounted for substantial amounts of waste during some years. In 1989, the BOF reduced the legal compliment of gillnet gear to a maximum of 100 fathoms in length per permit holder, restricted the operation from one vessel to 100 fathoms, and granted ADF&G the authority to reduce length to 50 fathoms inseason. The BOF transposed this regulation in 1992 when it restricted herring gillnet length to 50 fathoms but granted ADF&G the ability to allow up to 100 fathoms of gear by emergency order. This change

enabled ADF&G to maintain an orderly fishery, helping ensure roe quality and minimizing potential waste. Gillnet depth remains unrestricted.

In October of 1989, the BOF reduced purse seines to 100 fathoms in length and 16 fathoms in depth. In 1995, the BOF further restricted purse seine depth to 625 meshes, of which 600 could be no larger than 1.5 inches. Depth was reduced in 1995 to control harvesting capacity. Adjustments in allowable gear have appeared to control waste and preserve order in the fishery without a substantial reduction in harvesting capacity.

Harvest and Management Performance

The commercial sac roe and spawn-on-kelp harvests in the Togiak District have been regulated by emergency order since 1981. From 1981 through 1987, informal policies directed ADF&G to ensure that minimum threshold biomass levels were observed before opening the herring fishery, and to manage the fishery so that exploitation did not exceed 20%. In 1988, the BOF incorporated the threshold and exploitation rate policies into the Bering Sea Herring Fishery Management Plan (5 AAC 27.060) for Togiak and other Bering Sea fisheries. Herring biomass in Togiak has been estimated at levels well above threshold requirements since 1981.

The average annual exploitation rate for the last 20 years slightly exceeded 20% but for the last 10 years has been 18.4% (Appendix B2). Annual exploitation ranged from 32% to 13.5% and has not exceeded 20% since 1998. Although the sac roe, spawn-on-kelp and Dutch Harbor food and bait fisheries take Togiak herring, only the sac roe harvests were used in calculating exploitation rates from 1981 to 1983. Estimates of herring biomass equivalent to spawn-on-kelp harvests and harvests in the Dutch Harbor fishery were not included when calculating exploitation rates until 1984 and 1988.

Herring purse seine and gillnet sac roe harvests are managed for allocation guidelines set forth in the Bristol Bay Herring Management Plan (BBHMP) (5 AAC 27.865). This plan states that, before opening the sac roe fishery, 1,500 short tons must be set aside for the spawn-on-kelp fishery, and 7% of the remaining available harvest is allocated to the Dutch Harbor food and bait fishery. After the spawn-on-kelp and the Dutch Harbor harvests are subtracted, the remaining harvestable surplus is allocated to the Togiak sac roe fishery: 30% of the harvestable surplus to the gillnet fleet, and 70% to the purse seine fleet. From 1988 through 2000, these percentages were set at 25% gillnet, 75% purse seine. The BOF modified these allocation percentages to the current ratio in 2001. To achieve gillnet and purse seine ratios, ADF&G adjusts fishing time and area for each gear type.

The management plan was modified again by the BOF in December 2003. The BOF allowed the inseason allocation management to be uncoupled after each gear type had harvested 80% of its allocation. The other change allowed up to 50% of the spawn-on-kelp allocation to be reallocated to the sac roe fishery if it was not harvested in a spawn-on-kelp fishery.

The BOF and the industry have directed ADF&G to give product quality and fishery value an equal priority with exploitation objectives. Management Guidelines for Commercial Herring Sac Roe Fisheries (5 AAC 27.059) state ADF&G may manage sac roe fisheries to enhance product value by opening areas in which sampling has demonstrated high herring roe content and large herring size, and to minimize harvest of recruit size herring. The BBHMP also states that the primary objective in the sac roe fishery is to prosecute an orderly, manageable fishery while striving for the highest level of product quality and a minimum of waste. Given these

regulations and comments from industry, ADF&G considers maximizing quality and value primary objectives in the Togiak fishery.

In 1992, over 20,000 tons of herring were harvested by purse seines in one 20-minute period. This magnitude of harvest from a single opening, combined with a limited processing capacity, resulted in holding times up to 7 days, and large-scale deterioration of flesh and roe quality. The poor product quality resulting from the 1992 harvest and increasing market demands for high quality roe, compelled ADF&G to recognize quality problems associated with extended holding times of 3 days or longer. Limiting individual harvests to less than 3 days of processing capabilities became a management objective after 1992.

From 1992 until 2000, ADF&G limited harvests by carefully controlling the open area and duration of each purse seine opening. Since 2000, the fishery has been somewhat more self-regulating in that processors have smaller fleets and are more restrictive about how long they will hold herring before processing. The reduced processing capacity makes it impossible for the whole quota to be processed in less than 10 days.

Although controlling harvest used to be the major concern for managers, the last 4 years have been quite different from the derby style openings of the early 1990's. The seine fleet is now divided into processor controlled cooperative fleets that harvest just enough herring to keep the processing lines full from day to day. This has allowed managers to open large areas of the district for up to 16 hours at a time without the concern of having more fish harvested than processing capacity can handle in a short time. This is true for most of the fishery, but as the quota is approached, managers do have to guard against a large grab.

The cooperative seine fleets allow the participants to maximize the value of the fishery by reducing operating costs and allowing processors to control harvest, enforce a maximum set size and be highly selective in the fish they choose to harvest. This has led to higher inseason estimates of roe quality; postseason estimates have not necessarily increased however.

SPAWN-ON-KELP FISHERY OVERVIEW

Similar to the sac roe fishery, the spawn-on-kelp harvest in the Togiak District has been regulated by emergency order since 1981. Since 1984, the spawn-on-kelp fishery has been managed under guidelines provided in the Togiak District Herring Spawn on Kelp Management Plan (5 AAC 27.834). The plan essentially provides for an allocation of 350,000 lbs. of product, equivalent to 1,500 tons of herring, to this fishery. The plan also directs ADF&G to 1) rotate harvest areas (Figure 3) on a 2 to 3 year basis; 2) ensure product quality; and 3) include the herring equivalent to the spawn-on-kelp harvest when calculating exploitation.

Fishing effort in the spawn-on-kelp fishery increased steadily since its inception, and peaked at 532 participants in 1991 (Appendix B4). The fishery became limited to interim use and permanent permit holders in 1990. Following the 1991 season, the BOF limited the role of non-permit holders in the spawn-on-kelp fishery to assisting with transporting kelp after the period closure. By 1993, most permits issued for this fishery became permanent, stabilizing the number of permits at approximately 300.

From 1984 to 2005, the fishery was opened for all years except 1985, 1997, 1998, 2000, 2001, 2004 and 2005. Actual harvests exceeded the 350,000 lb. guideline harvest level by more than 10% in 6 years and fell short by more than 10% in four (Appendix B7). For the other years in which a fishery occurred, actual harvests were within 10% of the guideline. The 2 to 3 year

rotation schedule for kelp harvest areas was adhered to in all years except 1987. In 1987, area K 9 was opened after harvest in area K 10 fell short of the harvest guideline. The western half of area K 9 was opened the previous year.

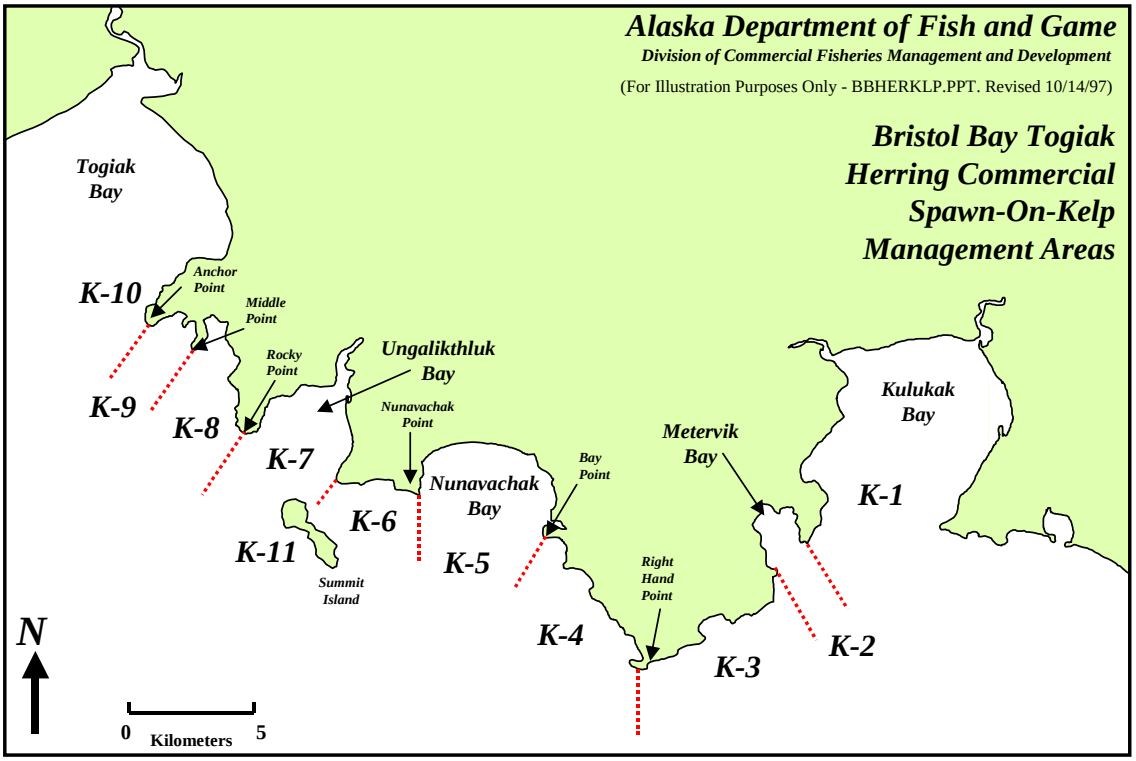

Figure 3.–Spawn-on-kelp management areas (K-1 through K11), Togiak District, Bristol Bay.

To ensure product quality ADF&G, industry representatives, and permit holders collect spawn-on-kelp samples to display at a public meeting each season, usually after the peak of herring spawning has occurred. Management decisions are based on comments from industry and users regarding sample quality.

2005 SEASON SUMMARY

Biomass Estimation

Aerial surveys of the Togiak District began April 15, 2005. Herring were first reported in the district on the afternoon of April 25, when a spotter pilot observed approximately 100 tons of herring. On April 28, approximately 11,800 tons of herring were observed in the Togiak Herring District. We documented 108,585 tons of herring on a survey on May 1. Survey conditions were generally poor with the exception of late in the evening when conditions improved on the large ebb following the small flood tide. Although other surveys indicated herring biomass was increasing, the timing of the peak survey was critical. Other surveys conducted after the peak also indicated the biomass was larger than forecast. We documented 68,000 tons during a survey on May 2, and documented 45,000 tons during another survey on May 16. The last survey flown documented 2,400 tons on May 26.

Age Composition

Approximately 5,152 herring were sampled for age, size and sex information from April 28 to May 6, 2005. Samples were collected from the commercial purse seine fishery, commercial gillnet fishery, and test purse seine sets. Length frequency analysis, based on the last 5 years of age at length information, was used to differentiate between age classes.

A sample size of 3,957 was collected from the commercial purse seine fishery. The sample was comprised of less than 1% age 4–5 herring, 25% age 6–7 herring, 47% age 8–9, and 27% age 10+ herring. Samples collected from the commercial purse seine fishery averaged 363g. Sex composition was divided 50.9% male and 49.1% female.

710 fish were sampled from the commercial gillnet fishery. The sample was comprised of 12% age 6–7 herring, 47% age 8–9 herring, and 42% age 10+ herring. Average weight of herring sampled from the commercial gillnet harvest was 399g. Sex composition was divided 40.7% male and 59.3% female.

A sample of 485 fish was collected from the purse seine test fishery. The sample was comprised of less than 1% age 4–5 herring, 16% age 6–7 herring, 37% age 8–9 herring, and 47% age 10+ herring. Samples collected from test purse seine sets averaged 398g. The sex ratio was divided 55.1% male and 44.9% female.

Age 8 and 9-year old herring were the predominant age classes during the commercial purse seine and gillnet fisheries while age 10 and older herring were the predominant age classes in the purse seine test fishery.

Fishery Overview

The Togiak District herring fisheries are managed in accordance with the Bristol Bay Herring Management Plan (5 AAC 27.865), which was modified by the BOF in December 2003. The plan specifies a maximum allowable exploitation rate of 20% and allocates the harvestable surplus among all the fisheries harvesting the Togiak herring stock. The 2005 preseason forecasted biomass was 96,029 tons. The projected harvest guideline for each fishery was as follows: 1,500 tons herring equivalent or 350,000 lbs. of product for the spawn-on-kelp fishery; 1,239 tons for the Dutch Harbor food and bait fishery; and the remaining 16,467 tons to the sac roe fishery. The management plan specifies that ADF&G will manage the sac roe fishery so that 70% of the removal is taken by purse seines (11,527 tons in 2005) and 30% of the removal is taken by gillnets (4,940 tons in 2005). ADF&G's inseason biomass surveys exceeded the preseason forecast (Table 30). Although the observed biomass was a little more than 12,000 tons higher than the preseason forecast, the proximity of fish to Cape Newenham indicated some of the fish were probably destined for areas outside of the Togiak District. ADF&G staff decided to use 105,000 tons as the total biomass an increase of 9,000 from the preseason forecast. This increase in biomass resulted in the following changes to the quotas: the overall quota was increased by 1,800 tons: 7% (126 tons) was allocated to the Dutch Harbor food and bait fishery; the remaining 1,674 tons was allocated as follows: 70% (1,172 tons) to Togiak sac roe purse seine fishery and 30% (502 tons) to the Togiak sac roe gillnet fishery. In addition, there was no spawn-on-kelp harvest in 2005 so half of the unharvested 1,500 ton spawn-on-kelp allocation was reallocated to the Togiak sac roe fishery as follows: 70% (525 tons) to the purse seine fishery and 30% (225 tons) to the gillnet fishery. Therefore, the total purse seine quota was 13,224 tons and the total gillnet quota was 5,667 tons for a combined total of 18,891 tons.

The Bristol Bay Herring Management Plan and other regulations direct ADF&G to conduct an orderly, manageable fishery and strive for the highest level of product quality with a minimum of waste. In recent years, the seine fleet has been comprised of processor-organized cooperatives. For the 2005 season, management staff again planned to allow long-duration seine openings over a large area of the district and to let the processors limit harvest for their individual fleets based on processing capacity. Input from the fleet and industry indicated that this would slow the "race for fish" and allow for improved quality and value.

During the winter of 2004–2005, climatic conditions were marginally warmer than usual; there was a moderate amount of snowfall in southwestern Alaska and the ground still had significant amounts of snow on it at the time of the first herring survey on April 15. The Bering Sea ice pack had receded north of Cape Newenham by mid March, and there were large areas of 4° C. water in the Bering Sea. A cold snap from the end of March to early April cooled water temperatures and created some ice in the near shore waters. By mid April, the temperature had increased again and there was very little ice observed during the first herring survey. These factors indicated there could be an early arrival of herring in the Togiak District, but managers were unsure when that would occur. To predict spawning timing for Togiak herring, ADF&G used a temperature model based on sea surface temperatures from Unimak Pass. These temperatures predicted the first spawn would be April 25 with the first harvest occurring April 28. Extremely cold temperatures in early April confounded another model that uses April mean air temperatures from Cape Newenham and the projection from that model was not used.

ADF&G staff polled processing companies preseason to assess processing capacity for the 2005 season and to inquire about additional concerns or issues. The poll indicated that two additional companies would be participating in the 2005 Togiak herring fishery and that processing capacity was estimated to be 2,565 tons per day, an increase of more than 365 tons from 2004. However, after registration the projected processing capacity was only 2,330 tons. Although there were no major concerns preseason, ADF&G held a teleconference on March 22 to discuss the upcoming season with processing companies and permit holders. There were some questions about the possibility of increasing the quota inseason and the allocation, but the conference took less than 15 minutes.

Company registration for processors intending to buy herring and/or spawn-on-kelp product in the Togiak District began on April 15 by fax. Seven of the eight companies that registered for the sac roe fishery planned to buy both seine and gillnet fish and one company registered to buy seine caught fish only. Given the smaller harvestable surplus available, (16,467 tons) and the daily processing capacity of 2,330 tons, managers anticipated that there would be few problems in harvesting the available quota while maintaining the opportunity to harvest high quality fish.

Test fishing with gillnets and purse seines began on the afternoon of April 28; none of the test fish samples indicated the presence of marketable quality roe. Test fishing continued on April 29, with samples taken from five different sets. Samples had an average mature roe content of below 10% ranging from 5.9% to 10.5% with an average of 9.03%. By the afternoon of April 29, ADF&G staff had not been able to document the threshold biomass of 35,000 tons via aerial survey. This was primarily due to poor survey conditions during the day although reports from spotter pilots indicated that survey conditions were much better in the late evening. Although herring were reported on the grounds as early as April 25, ADF&G staff were only able to document 12,000 tons on April 28 (Table 1). ADF&G staff was ready to stipulate that threshold biomass was present on the grounds on April 29 based on the number of days herring had been

present and the poor survey conditions. Because test fish results were less than commercial quality for both the seine and gillnet areas and little spawn had been documented, the decision was made to wait one more day and fish beginning on the morning of April 30.

Purse Seine

The first purse seine opening was for 12 hours on April 30 in the area from Right Hand Point to Cape Newenham with the exception of Togiak Bay (Table 31). The period resulted in 48 deliveries and a harvest of 5,362 tons of herring with an average mature roe percentage of 10.2%. The second seine opening was announced for 10:00 a.m. on May 1. Early in the season, it seemed reasonable to continue with seine openings while the gillnet fleet caught up on their harvest percentage. The second seine opening resulted in a harvest of 442 tons of herring from seven deliveries with an average mature roe content of 10.6%.

Over the past several years, the seine fishery has turned into a relatively self-regulating fishery. Processing companies manage their cooperative fleets such that they harvest enough fish to keep the processing lines running at full capacity after the daily gillnet harvest has been accounted for. For 2005, the processing capacity was estimated at 2,330 tons per day, so daily harvest was expected to correlate closely with the daily processing capacity. This proved false after the first opening, but harvest in the second opening was greatly reduced, allowing companies to work through fish taken on April 30.

After the first two openings, fishing progressed in an orderly fashion and the seine fleet was given 12–16 hour periods each day for the next 4 days. This allowed the fleet to harvest fish throughout the day and find quality fish without necessarily setting on every school to test it. This also allowed processors to reduce holding time by waiting until late in the day to have fish harvested, adjust the amount they needed to buy based on gillnet harvest, be selective about the quality of herring bought and reduce the size of sets bought to improve quality.

Purse seine fishing was orderly with plenty of time and area provided for each opening. On May 5, the sixth purse seine opening was held but poor weather prevented any harvest despite 13 hours of fishing time. At the time of the opening on May 5, only 815 tons remained on the quota. With no harvest, companies were able to process fish and free up tender capacity. This created the potential for much greater harvest on May 6.

May 6 dawned with somewhat improved weather, but with turbid water and overcast skies that varied from 100 to 1000 foot ceiling. With poor conditions and the complete failure to harvest fish on the previous day, a 2-hour opening was announced for the area between Tongue Point and Oosik Spit. It was deemed better to have a little longer opening and possibly go over the quota than have a shorter opening and again harvest nothing.

The 2-hour opening resulted in a harvest of 1,524 tons, 709 tons more than the remaining quota. The final seine harvest was 15,071 tons, 14% more than the targeted quota (Appendix B7). The average mature roe content was 9.5% and the average weight of herring harvested was 389 grams. The seine fleet had 83 hours of fishing time over the course of 7 days (Table 31).

Gillnet

Gillnet test fishing began April 28, collecting information on roe quality in the area between Kulukak Bay and Right Hand Point. Test fishery samples averaged 8.8% mature roe. On April 29, more gillnet test fish samples were obtained. These samples averaged just over 10% mature roe but a couple of samples were 6 and 8%. Staff determined that commercial fishing was not

warranted because of mixed fish. Test fishing began again early on April 30. Results from these samples in the areas of Eagle Bay and Kulukak Bluffs were very good. The average mature roe content was 12.65%. Commercial fishing with gillnets began at 11:00 a.m. on April 30 (Table 31).

Reports from the grounds indicated that quality and volume were both high. The first gillnet period was extended into the evening as fishing continued to be good. The weather forecast indicated the winds might increase making the preferred fishing area difficult to fish. The prospect of bad weather caused managers to extend the fishing period through the night. If the weather did get bad the following day, the fleet needed the opportunity to fish while the weather was favorable.

The forecasted wind did not materialize and fishing continued with good quality and volume. The harvest through midnight of April 30 was 1,231 tons with an average mature roe content of 11.1%. Gillnet fishing continued until 11:00 p.m. on May 1 with high volume and quality. The harvest for May 1 was 1,244 tons of herring with 11.1% average mature roe content. Although some companies limited their fleets, the harvest was still strong and the allocation between the seine and gillnet fleets was never an issue in 2005. Gillnet openings continued through May 4 with at least 13 hours of fishing time a day.

The weather deteriorated on May 5 and the gillnet fleet was unable to fish beginning around 1:00 a.m. and could not resume fishing until late on May 6. The combined harvest for these 2 days was only 143 tons. This left approximately 684 tons of herring as the unharvested portion of the quota. With 2 days of weather that made fishing impossible, ADF&G staff were unsure of how many vessels remained in the area to harvest the remainder of the quota and how much herring would still be in the area. With this uncertainty and the field office being dismantled as staff moved back to Dillingham the decision was made to allow fishing daily from 6:00 a.m. until 10:00 p.m. until the remaining quota was harvested.

This schedule was implemented on Saturday, May 7. The harvest was 618 tons even though estimated fleet size was 25 vessels. This was some of the best fishing all season and the 12.2% average roe content was the highest all season. Harvest information was received by noon on Sunday, May 8. ADF&G staff announced that the remaining quota was expected to be harvested and that the gillnet fishery would close at 2:00 p.m. on May 8. Harvest on May 8 was 213 tons, bringing the total season harvest to 5,841 tons of herring with an average weight of 411 grams and an average mature roe content of 11.2% (Table 32). The gillnet fleet fished for 149 hours over 9 days. The peak vessel count was 57 boats. This was significantly below the preseason projection of 82 vessels.

Spawn on Kelp

No companies registered to buy herring spawn-on-kelp in 2005, therefore there were no openings and no commercial harvest.

EXPLOITATION

The 2005 herring fisheries were managed for a maximum exploitation rate of 20% of the inseason biomass estimate. Combining the sac roe harvest (20,495 tons with an average weight of 395 grams and an average roe percentage of 10.0%), and test fish harvest (417 tons) resulted in an exploitation of 20,912 tons. The Dutch Harbor food and bait fishery harvest was 1,154 tons; the total harvest for 2005 is estimated to be 22,066. Based on the inseason biomass

estimate of 105,000 tons, the 2005 exploitation rate would be calculated at approximately 21.02%.

EXVESSEL VALUE

The projected exvessel value of the 2005 Togiak herring fishery is approximately $3.0 million (Appendix B6). This is based on grounds price estimate of $150 per ton and does not include any postseason adjustments. The 2005 exvessel value of $3.0 million is 17% higher than the 2004 value of $2.5 million and just slightly higher than the 5-year average of $2.9 million.

REFERENCES CITED

Lebida, R. C. and D. C. Whitmore. 1985. Bering Sea herring aerial survey manual. Alaska Department of Fish and Game, Division of Commercial Fisheries Management and Development, Bristol Bay Data Report 85-2, Anchorage.

ACKNOWLEDGEMENTS

The authors gratefully acknowledge the Commercial and Subsistence Fisheries staff of the Dillingham, King Salmon, and Anchorage offices of the Alaska Department of Fish and Game for their contributions to this report.

Permanent Employees with the Division of Commercial Fisheries

West Side: Tim Sands, Nushagak Biologist; Charlotte Westing, Togiak Biologist; Arthur Reynolds, Maintenance Worker; Karen Brito, Program Technician.

East Side: Steve Morstad, Naknek/Kvichak Biologist; Carol Klutsch, Program Technician.

Anchorage: Anica Estes, Information Officer; Tim Baker, Research Analyst; Lowell Fair, Research Project Leader; Keith Weiland, Egegik/Ugashik Biologist Paul Salomone, Egegik/Ugashik Biologist Trainee; Chuck Brazil, Research Biologist; Fredrick West, Research Biologist.

Seasonal Employees with the Division of Commercial Fisheries

West Side: Bristol Whitmore, Seafood Industry Coordinator (Herring and Salmon); Brad Palach, Technical Consultant (Herring and Salmon); Eric Barnhill, Herring; Simon Prennace, Herring, Field Camp Coordinator; Rebekah Fonkert, Supply Technician; Alasha Robertson, Night Office Staff; Iris Bowers, BBEDC Intern; Violet Apalyak, BBNA Intern; Joe Winter, Wood River Tower; Loulare Moore, Wood River Tower; Shelley Schroeder, Wood River Tower; Dean Meili, Igushik River Tower; Phillip Carscallen, Igushik River Tower; Justin Priest, Igushik River Tower; Jason Cheney, Wood River Tower, Togiak River Tower; Jaclyn Reamey, Togiak River Tower; Heather Hooper, Nuyakuk River Tower; Jonathan Barton, Nuyakuk River Tower; Dylan Hooper, Nuyakuk River Tower; Konrad Mittelstadt, Nushagak River Sonar; Alexander Pennino, Nushagak River Sonar; Jeanette LeClair, Nushagak River Sonar; Scott Kent, Nushagak River Sonar; Colton Lipka, Nushagak River Sonar; Lucas Hegg, Nushagak River Sonar; Charlette Fullinck, Nushagak District Test Fish, Togiak River Tower.

East Side: Mary Emery, Seafood Industry Coordinator/Office Manager; Katey Inman, Night Office Staff; Fred Tilly, Kvichak Smolt/ Field Camp Coordinator ; Karen Saunders, Fish Ticket Editor; Cathy Tilly, Scale Reader ; Sally Hamm, District Test Fish; Rebecca Walker, Supply Technician; Susan Klock, Naknek Tower; Kelsey Romig, Kvichak River Test Fish; Charles Lochner, Kvichak River Test Fish;; Brad Russell, Egegik River Test Fish; Dirk Middleton, Egegik River Test Fish; Jason Macrander, Ugashik River Test Fish; Chris Clark, Ugashik River Test Fish; Casey Jacobs, Kvichak River Tower; Rob Regnart, Kvichak River Tower; Tod Bogan, Kvichak River Tower; Rob Boyce, Naknek River Tower; Eric Sleppenbach, Naknek River Tower; Chris Sewright, Alagnak River Tower; Ludia Kasayulie, Alagnak River Tower; Vitoon Towatanasitid, Alagnak River Tower; Ian Blake, Ugashik River Tower; Matt Luthi, Ugashik River Tower; Tom Josephson, Ugashik River Tower; Chris Sewright, Egegik River Tower; Trevor Keith, Egegik River Tower; Chad Bieberich, Egegik River Tower.

Permanent Employees with the Division of Subsistence

James Fall, Subsistence Resource Program Manager; Ted Krieg, Subsistence Resource Specialist; Molly Chythlook, Fish & Wildlife Technician; Eunice Dyasuk, Program Technician; Dave Caylor Analyst/Programmer.

TABLES

Table 1.–Comparison of inshore sockeye salmon forecast versus actual run, escapement goals versus actual escapements, and projected versus actual commercial catch, by river system and district, in thousands of fish, Bristol Bay, 2005.

		Inshore Run			Escapement		Inshore Catch		
District and River System [a]		**Forecast**	**Actual**	**Relative Deviation** [b]	**Range**	**Actual**	**Projected Harvest**	**Actual**	**Relative Deviation** [b]
NAKNEK-KVICHAK DISTRICT									
Kvichak River		2,354	2,878	-0.18	2,000–10,000	2,320	354	557	-0.36
Branch River		4,925	5,301	-0.07	170–200	4,219	4,740	1,082	3.38
Naknek River		3,755	7,806	-0.52	800–1,400	2,745	2,655	5,061	-0.48
	Total	11,034	15,985	-0.31	6,970–11,600	9,284	7,749	6,700	0.16
EGEGIK DISTRICT		10,376	9,626	0.08	800–1,400	1,622	9,276	8,004	0.16
UGASHIK DISTRICT		3,608	3,002	0.20	500–1,200	800	2,758	2,202	0.25
NUSHAGAK DISTRICT									
Wood River		5,034	4,771	0.06	700–1,500	1,497	3,934	3,274	0.20
Igushik River		699	1,878	-0.63	150–300	366	474	1,512	-0.69
Nushagak-Mulchatna		1,697	3,442	-0.51	340–760	1,096	1,147	2,346	–0.51
	Total	7,430	10,091	-0.26	1,190–2,560	2,959	5,555	7,132	–0.22
TOGIAK DISTRICT		388	565	-0.31	100–200	156	238	410	-0.42
TOTAL BRISTOL BAY		**32,836**	**39,269**	**-0.16**	**9,560–16,960**	**14,820**	**25,576**	**24,449**	**0.05**

[a] The Bristol Bay inshore forecast does not include several minor river systems, including the Snake River drainage in Nushagak District, and the Kulukak, Osviak, Matogak and Slug River system in Togiak District. Catches, escapements, and total runs for these smaller systems are not included in this table so that forecast efficacy may be gauged. Totals may not equal column sums due to rounding.

[b] Relative deviation = (forecast - actual).

Table 2.–Inshore forecast of sockeye salmon returns by age class, river system and district, in thousands of fish, Bristol Bay, 2005.

District and	2-Ocean			3-Ocean			Other	
River System	**1.2 (2001)**	**2.2 (2000)**	**Total**	**1.3 (2000)**	**2.3 (1999)**	**Total**		**Total**
NAKNEK-KVICHAK DISTRICT								
Kvichak River	688	294	982	486	886	1,372	-	2,354
Branch River	1,752	165	1,917	2,650	358	3,008	-	4,925
Naknek River	336	138	474	2,493	788	3,281	-	3,755
Total	2,776	597	3,373	5,629	2,032	7,661	-	11,034
EGEGIK DISTRICT	391	1,802	2,193	3,723	4,460	8,183	-	10,376
UGASHIK DISTRICT	715	845	1,560	1,527	521	2,048	-	3,608
NUSHAGAK DISTRICT								
Wood River	1,496	91	1,587	3,309	138	3,447	-	5,034
Igushik River	170	24	194	459	46	505	-	699
Nushagak River	263	12	275	1,161	8	1,169	253	1,697
Total	1,929	127	2,056	4,929	192	5,121	253	7,430
TOGIAK DISTRICT	79	17	96	227	65	292		388
TOTAL BRISTOL BAY[a]								
Number	**5,890**	**3,388**	**9,278**	**16,035**	**7,270**	**23,305**	**253**	**32,836**
Percent	18	10	28	49	22	71	1	100

[a] Sockeye salmon of several minor age classes are expected to contribute an additional 1–2% to the total return.

Table 3.–Inshore run of sockeye salmon by age class, river system and district, in thousands of fish, Bristol Bay, 2005.

District and River System [a]		1.2	2.2	2-Ocean	1.3	2.3	3-Ocean	1.4	Total
NAKNEK-KVICHAK DISTRICT									
Kvichak River									
	Number	519	916	1,435	1,134	259	1,393	4	2,878
	Percent	18.0	31.8	49.9	39.4	9.0	48.4	0.1	98.3
Branch River									
	Number	712	235	947	3,977	362	4,339	4	5,301
	Percent	13.4	4.4	17.9	75.0	6.8	81.9	0.2	99.7
Naknek River									
	Number	388	452	840	5,915	973	6,888	14	7,806
	Percent	5.0	5.8	10.8	75.8	12.5	88.2	0.2	99.0
Total	Number	1,619	1,603	3,222	11,026	1,594	12.620	22	15,985
	Percent	10.1	10.0	20.2	69.0	10.0	78.9	0.1	99.2
EGEGIK DISTRICT									
	Number	286	3,460	3,746	2,830	2,933	5,763	5	9,626
	Percent	3.0	35.9	38.9	29.4	30.5	59.9	0.1	98.8
UGASHIK DISTRICT									
	Number	371	88	459	2.123	387	2,510	7	3,002
	Percent	12.4	2.9	15.3	70.7	12.9	83.6	0.2	99.1
NUSHAGAK DISTRICT									
Wood River									
	Number	2,163	128	2,291	2,194	180	2,374	7	4,771
	Percent	45.3	2.7	48.0	46.0	3.8	49.8	0.1	97.8
Igushik River									
	Number	79	65	144	1,517	216	1,733	0	1,878
	Percent	4.2	3.5	7.7	80.8	11.5	92.3	0.0	99.9
Nushagak River									
	Number	332	14	346	2,736	23	2,759	68	3,442
	Percent	9.6	0.4	10.1	79.5	0.7	80.2	2.0	90.2
Total	Number	2,574	207	2,781	6,447	419	6,866	75	10,091
	Percent	25.5	2.1	27.6	63.9	4.2	68.0	0.7	95.6
TOGIAK DISTRICT[b]									
	Number	62	137	199	309	49	358	1	565
	Percent	11.0	24.2	35.2	54.7	8.7	63.4	0.2	98.6
TOTAL BRISTOL BAY [c, d]									
	Number	**4,912**	**5,495**	**10,407**	**22,735**	**5,382**	**28,117**	**110**	**39,269**
	Percent	**12.5**	**14.0**	**26.5**	**57.9**	**13.7**	**71.6**	**0.3**	**98.1**

[a] The inshore run data does not include the South Peninsula or General District catch of Bristol Bay sockeye or immature high seas bycatch.

[b] Does not include rivers other than Togiak River.

[c] Totals include minor age classes not listed in this table however, minor rivers and creeks are not included.

[d] Totals may not equal column sums due to rounding.

Table 4.–Inshore commercial catch and escapement of sockeye salmon, in numbers of fish, Bristol Bay, 2005.

District and River System		Catch	Escapement	Total Run
NAKNEK-KVICHAK DISTRICT				
Kvichak River		557,186	2,320,332	2,877,518
Alagnak River		1,081,990	4,219,026	5,301,016
Naknek River		5,061,410	2,744,622	7,806,032
	Total	6,700,586	9,283,980	15,984,566
EGEGIK DISTRICT		8,004,125	1,621,734	9,625,859
UGASHIK DISTRICT		2,202,202	799,612 [a]	3,001,814
NUSHAGAK DISTRICT				
Wood River		3,274,117	1,496,550	4,770,667
Igushik River		1,512,321	365,709	1,878,030
Nushagak-Mulchatna		2,345,904	1,096,268	3,442,172
	Total	7,132,342	2,958,527	10,090,869
TOGIAK DISTRICT				
Togiak Lake			149,178	149,178
Togiak River/Tributaries		409,700	6,600	416,300
Kulukak System		53,774		53,774
Other Systems [b]		0	3,713	3,713
	Total	463,474	159,491	622,965
TOTAL BRISTOL BAY		**24,502,729**	**14,823,344**	**39,326,073**

Note: Blank cells represent no data.

[a] Includes Ugashik River Tower and aerial survey estimates from King Salmon and Dog Salmon rivers.

[b] "Other Systems" escapement includes Negukthlik, Ungalikthluk, Osviak, Matogak, Quigmy, and Slug Rivers.

Table 5.–Summary of sockeye salmon test fishing indices in the Naknek/Kvichak District, by index area and date, Bristol Bay, 2005.

Date	Naknek R. Mouth	Pederson Point	Cutbank & Graveyard	Half Moon Bay	Middle Naknek	Johnston Hill	Division Buoy	Ships Anchorage
6/20	6				0		15	17
6/22	2				134	0	5	361
6/24	107				152	0	84	300
6/27	685				87	50	0	
6/29	504	649		336				

Note: All indices expressed in numbers of fish/100 fathoms/hour to the nearest index point. Blank cells represent no data.

Table 6.–Summary of sockeye salmon test fishing indices in the Ugashik District, by index area and date, Bristol Bay, 2005.

Index Area	July 6	July 10	July 11
Cape Grieg (Nearshore)			
4 miles North of Smoky Point (Nearshore)			
2 miles North of Smoky Point (Outer line)			
Smoky Point Bar North Side (Inshore)			
6 miles South of South Spit	1,022		
Three Miles South of South Spit (Nearshore)	242		
1.5 miles south of South Spit			
South Spit (Mid Channel)	1,303		
Dago Creek Mouth			
Pilot Point	2,234	111	
Between Pilot Point and Muddy Point	2,896		343
South Spit			
Inner South Channel			
Below inner district boundary line west side			
Below inner district boundary line east side			
Above inner district boundary line east side	1,294		
Above inner district boundary line westside		788	
Between Dog Salmon and King Salmon Rivers		955	1,004
Mouth of Dog Salmon River		316	

Note: All indices expressed in number of fish/100 fathom hours to the nearest full index point. Blank cells represent no data.

Table 7.–Summary of sockeye salmon test fishing indices in the Nushagak District, by index area and date, Bristol Bay, 2005.

Date	Hanson Point	Across Hanson Pt	Tule Point	Picnic Point	Grassy Island	Nushagak Point	Pile Driver	Coffee Point	Kanakanak Bluff
6/19	541	525	1,727	0	0				
	506	706	987						
6/20	0	8,971	0	0	0				
	524	4,827	359						
6/21	677	2,202	4,085	1,657	2,054				
	1,231	1,644	482						
6/22	0	629	1,277	0	750				
	2,707	1,013	2,574						
6/22	1,064	984	5,200	0	236				
	1,096	494	7,500						
6/23	9,744	4,167	4,962	0	175				
	11,795	2,323	4,918						
6/23	909	3,051	8,244	0	2,487				
	1,304	1,850	8,832						
6/24	3,776	5,085	6,774	0	0			0	
	7,317	5,696	7,925						
6/24	188	1,423	3,175	0	0				
	550	857	2,975						
6/25	4,865	2,983	0	0	0				
	5,556	1,685	1,904						
6/25	186	517	3,724	0	0				
	0	228	2,400						
6/26	822	1,034	1,200	0	0				
	2,500	1,546	1,171						
6/26	670	0	4,033	0	0				
	548	2,256	2,110						
6/27	558	1,724	1,333	0	0				
	1,176	1,161	741						
6/27	1,148	0	2,256	0	0				
	0	714	1,744						
6/28	486	1,478	339	0	0				
	571	756	324						
6/29	1,224	706	3,478	269	0				
	1,967	1,463	5,526						
6/30	3,920	5,056	12,480						
	7,826	1,006	18,045						
7/1	1,786	5,532	9,474	2,381	0				
	1,463	4,074	3,392						
7/2	0	2,416	3,871	0	0				
	887	3,121	5,638						
7/3	577	4,162	3,064	390	553				
	649	4,364	4,541						
7/4	205	3,750	1,759	198	194				
	443	4,091	2,007						

Note: All indices expressed in number of fish/100 fathoms-hours to the nearest full index point. Indices listed first for each station were recorded using 5 1/8 inch mesh gear, second with 4 3/4 inch gear. Blank cells represent no data.

Table 8.–Commercial fishing emergency orders, by district and stat area, Bristol Bay, 2005.

Number[a]	Start Date	Start Time		End Date	End Time	Effective Time
Naknek/Kvichak District						
Drift Net						
AKN.01	June 1	9:00 a.m.	to	July 25	9:00 a.m.	[b]
AKN.73	July 12	5:30 p.m.	to	July 13	12:30 a.m.	7.0-hours
AKN.73	July 13	5:00 a.m.	to	July 13	2:00 p.m.	9.0-hours
AKN.75	July 13	7:00 p.m.	to	July 14	1:00 a.m.	6.0-hours [c]
AKN.75	July 14	6:00 a.m.	to	July 14	2:00 p.m.	8.0-hours
AKN.79	July 14	7:30 p.m.	to	July 15	1:30 a.m.	6.0-hours
AKN.79	July 15	7:00 a.m.	to	July 15	2:00 p.m.	7.0-hours
AKN.82	July 15	8:30 p.m.	to	July 16	3:30 a.m.	7.0-hours
AKN.82	July 16	7:30 a.m.	to	July 16	2:00 p.m.	6.5-hours
AKN.82	July 16	9:00 p.m.	to	July 17	4:00 a.m.	7.0-hours
AKN.82	July 17	8:00 a.m.	to	July 17	3:00 p.m.	7.0-hours [d]
Set Net						
AKN.01	June 01	9:00 a.m.	to	July 25	9:00 a.m.	[b]
AKN.71	July 12	4:30 a.m.	to	July 12	1:30 p.m.	9.0-hours
AKN.73	July 12	5:30 p.m.	to	July 13	12:30 a.m.	7.0-hours
AKN.73	July 13	5:00 a.m.	to	July 13	2:00 p.m.	9.0-hours
AKN.75	July 13	2:00 p.m.				[e]
AKN.82				July 17	3:00 p.m.	97.0-hours
Naknek Section						
Drift Net						
AKN.65	July 11	5:00 a.m.	to	July 11	1:00 p.m.	8.0-hours
AKN.71	July 12	5:00 a.m.	to	July 12	1:30 p.m.	8.5-hours
Set Net						
AKN.65	July 11	4:00 a.m.	to	July 11	1:00 p.m.	9.0-hours
Naknek River Special Harvest Area						
Drift Net						
AKN.10	June 20	11:00 a.m.	to	June 20	4:00 p.m.	5.0-hours
AKN.12	June 21	11:30 a.m.	to	June 21	5:00 p.m.	5.5-hours
AKN.20	June 25	4:00 p.m.	to	June 25	9:00 p.m.	5.0-hours
AKN.24	June 26	4:30 p.m.	to	June 26	11:00 p.m.	6.5-hours
AKN.24	June 27	5:00 a.m.	to	June 27	1:00 p.m.	8.0-hours
AKN.25	June 28	6:00 a.m.	to	June 28	1:30 p.m.	7.5-hours
AKN.27	June 28	7:00 p.m.	to	June 29	1:30 a.m.	6.5-hours
AKN.29	June 29	8:00 p.m.	to	June 30	2:30 a.m.	6.5-hours
AKN.31	June 30	9:00 p.m.	to	July 1	4:30 a.m.	7.5-hours
AKN.31	July 1	8:00 a.m.	to	July 1	3:30 p.m.	7.5-hours
AKN.33	July 1	10:00 p.m.	to	July 2	6:00 a.m.	8.0-hours
AKN.37	July 2	11:00 p.m.	to	July 3	7:00 a.m.	8.0-hours
AKN.42	July 4	12:00 a.m.	to	July 4	8:00 a.m.	8.0-hours
AKN.42	July 4	11:30 a.m.	to	July 4	6:00 p.m.	6.5-hours
AKN.46	July 5	12:30 a.m.	to	July 5	9:00 a.m.	8.5-hours
AKN.46	July 5	12:00 p.m.	to	July 5	6:30 p.m.	6.5-hours
AKN.50	July 6	1:30 a.m.	to	July 6	10:00 a.m.	8.5-hours
AKN.50	July 6	1:00 p.m.	to	July 6	7:00 p.m.	6.0-hours
AKN.52	July 7	2:00 p.m.	to	July 7	8:00 p.m.	6.0-hours
AKN.57	July 8	2:30 a.m.	to	July 8	11:00 a.m.	8.5-hours
AKN.57	July 8	2:00 p.m.	to	July 8	8:30 p.m.	6.5-hours

-continued-

Table 8.–Page 2 of 8.

Number[a]	Start Date	Start Time		End Date	End Time	Effective Time
AKN.60	July 9	3:30 p.m.	to	July 9	9:00 p.m.	5.5-hours
AKN.64	July 10	4:00 a.m.	to	July 10	12:00 p.m.	8.0-hours
AKN.64	July 10	4:30 p.m.	to	July 10	10:00 p.m.	5.5-hours
Set Net						
AKN.07	June 19	11:00 p.m.	to	June 20	7:00 a.m.	8.0-hours
AKN.12	June 21	12:00 a.m.	to	June 21	8:00 a.m.	8.0-hours
AKN.21	June 26	4:00 a.m.	to	June 26	12:00 p.m.	8.0-hours
AKN.25	June 27	6:00 p.m.	to	June 28	12:30 a.m.	6.5-hours
AKN.27	June 29	6:30 a.m.	to	June 29	2:00 p.m.	9.0-hours
AKN.29	June 30	7:30 a.m.	to	June 30	3:00 p.m.	7.5-hours
AKN.33	July 2	9:00 a.m.	to	July 2	4:00 p.m.	7.0-hours
AKN.37	July 3	10:00 a.m.	to	July 3	5:00 p.m.	9.5-hours
AKN.53	July 7	2:00 a.m.	to	July 7	10:30 a.m.	8.5-hours
AKN.57	July 9	3:00 a.m.	to	July 9	11:30 a.m.	8.5-hours
AKN.65	July 11	4:00 a.m.	to	July 11	1:00 p.m.	9.0-hours
AKN.71	July 12	4:30 a.m.	to	July 12	1:30 p.m.	9.0-hours
AKN.73	July 12	5:30 p.m.	to	July 13	12:30 a.m.	7.0-hours
AKN.73	July 13	5:00 a.m.	to	July 13	2:00 p.m.	9.0-hours
AKN.75	July 13	7:00 p.m.	to	July 14	1:00 a.m.	6.0-hours
AKN.75	July 14	6:00 a.m.	to	July 14	2:00 p.m.	8.0-hours
AKN.79	July 14	7:30 p.m.	to	July 15	1:30 a.m.	6.0-hours
AKN.79	July 15	7:00 a.m.	to	July 15	2:00 p.m.	7.0-hours
AKN.82	July 15	8:30 p.m.	to	July 16	3:30 a.m.	7.0-hours
AKN.82	July 16	7:30 a.m.	to	July 16	2:00 p.m.	6.5-hours
AKN.82	July 16	9:00 p.m.	to	July 17	4:00 a.m.	7.0-hours
AKN.82	July 17	8:00 a.m.	to	July 17	3:00 p.m.	7.0-hours
Alagnak River Special Harvest Area						
Set Net						
AKN.38	July 3	1:00 p.m.	to	July 3	3:30 p.m.	2.5-hours
AKN.38	July 4	2:00 a.m.	to	July 4	6:00 a.m.	4.0-hours
AKN.45	July 4	2:00 p.m.	to	July 4	4:30 p.m.	2.5-hours
AKN.45	July 5	2:30 a.m.	to	July 5	7:00 a.m.	4.5-hours
AKN.49	July 5	2:30 p.m.	to	July 5	4:30 p.m.	2.0-hours
AKN.49	July 6	3:30 a.m.	to	July 6	8:00 a.m.	4.5-hours
AKN.52	July 6	3:30 p.m.	to	July 6	5:30 p.m.	2.0-hours
AKN.52	July 7	4:00 a.m.	to	July 7	9:00 a.m.	5.0-hours
AKN.56	July 7	4:00 p.m.	to	July 7	4:30 p.m.	2.0-hours
AKN.56	July 8	4:30 a.m.	to	July 8	9:30 a.m.	5.0-hours
AKN.60	July 8	5:00 p.m.	to	July 8	7:00 p.m.	2.0-hours
AKN.60	July 9	5:30 a.m.	to	July 9	10:00 a.m.	4.5-hours
AKN.63	July 9	6:00 p.m.	to	July 9	8:00 p.m.	2.0-hours
AKN.63	July 10	6:00 a.m.	to	July 10	11:00 a.m.	5.0-hours
AKN.67	July 10	6:30 p.m.	to	July 10	9:00 p.m.	2.5-hours
AKN.67	July 11	6:30 a.m.	to	July 11	12:00 p.m.	5.5-hours
AKN.68	July 11	7:30 p.m.	to	July 11	10:00 p.m.	2.5-hours
AKN.70	July 11	7:00 p.m.	to	July 11	11:00 p.m.	4.0-hours
AKN.70	July 12	6:30 a.m.	to	July 12	12:20 p.m.	6.0-hours
AKN.73	July 12	7:30 p.m.	to	July 13	11:30 p.m.	4.0-hours

-continued-

Table 8.–Page 3 of 8.

Number[a]	Start Date	Start Time		End Date	End Time	Effective Time
AKN.73	July 13	7:30 a.m.	to	July 13	1:30 p.m.	6.0-hours
AKN.75	July 13	8:30 p.m.	to	July 14	1:00 a.m.	4.5-hours [f]
AKN.75	July 14	8:00 a.m.	to	July 14	1:30 p.m.	5.5-hours
AKN.79	July 14	9:30 p.m.	to	July 15	2:00 a.m.	4.5-hours
AKN.79	July 15	9:00 a.m.	to	July 15	2:30 p.m.	5.5-hours
Egegik District						
Drift Net						
AKN.66	July 11	4:00 a.m.	to	July 11	10:30 a.m.	6.5-hours
AKN.66	July 11	3:30 p.m.	to	July 11	11:30 p.m.	8.0-hours
AKN.72	July 12	3:30 a.m.	to	July 12	7:30 a.m.	4.0-hours
AKN.72	July 12	4:00 p.m.	to	July 11	8:00 p.m.	4.0-hours
AKN.72	July 13	4:30 a.m.	to	July 13	10:30 a.m.	6.0-hours
AKN.77	July 13	5:00 p.m.	to	July 14	12:00 a.m.	7.0-hours [g]
AKN.77	July 14	4:30 a.m.	to	July 14	12:30 p.m.	8.0-hours
AKN.77	July 14	5:30 p.m.	to	July 15	12:00 a.m.	6.5-hours
AKN.80	July 15	5:00 a.m.	to	July 15	1:00 p.m.	8.0-hours
AKN.80	July 15	6:30 p.m.	to	July 16	12:00 a.m.	5.5-hours
AKN.83	July 16	5:30 a.m.	to	July 16	1:30 p.m.	8.0-hours
AKN.83	July 16	7:30 p.m.	to	July 17	2:00 p.m.	18.5-hours
Set Net						
AKN.66	July 11	3:30 p.m.	to	July 11	11:30 p.m.	8.0-hours
AKN.72	July 12	4:00 p.m.	to	July 13	12:00 a.m.	6.0-hours [d]
AKN.72	July 13	3:30 a.m.	to	July 13	11:30 a.m.	8.0-hours
AKN.77	July 14	4:30 a.m.	to	July 14	12:30 p.m.	8.0-hours
AKN.80	July 15	5:00 a.m.	to	July 15	1:00 p.m.	8.0-hours
AKN.80	July 15	5:00 a.m.	to	July 15	1:00 p.m.	8.0-hours
AKN.83	July 16	5:30 a.m.	to	July 16	1:30 p.m.	8.0-hours
AKN.83	July 16	7:30 p.m.	to	July 17	2:00 p.m.	18.5-hours
Egegik Special Harvest Area						
Drift Net						
AKN.01	June 01	12:00 a.m.	to	June 16	9:00 a.m.	weekly schedule
AKN.05	June 17	6:00 a.m.	to	June 17	2:00 p.m.	8.0-hours
AKN.09	June 19	8:00 a.m.	to	June 19	2:00 p.m.	6.0-hours [d]
AKN.13	June 21	10:00 a.m.	to	June 21	3:30 p.m.	5.5-hours
AKN.22	June 26	4:00 p.m.	to	June 26	8:00 p.m.	4.0-hours
AKN.26	June 27	4:00 p.m.	to	June 27	9:00 p.m.	5.0-hours
AKN.28	June 28	5:30 p.m.	to	June 28	9:30 p.m.	4.0-hours
AKN.30	June 29	6:30 p.m.	to	June 29	9:30 p.m.	3.0-hours [h]
AKN.30	June 30	6:30 a.m.	to	June 30	11:30 a.m.	5.0-hours
AKN.32	June 30	8:00 p.m.	to	June 30	11:00 p.m.	3.0-hours
AKN.32	July 01	7:00 a.m.	to	July 01	1:00 p.m.	6.0-hours
AKN.35	July 01	8:30 p.m.	to	July 01	11:30 p.m.	3.0-hours
AKN.35	July 02	7:30 a.m.	to	July 02	1:30 p.m.	6.0-hours
AKN.39	July 03	9:30 a.m.	to	July 03	3:30 p.m.	6.0-hours
AKN.41	July 03	8:30 a.m.	to	July 03	3:30 p.m.	7.0-hours
AKN.43	July 03	10:30 p.m.	to	July 04	4:30 a.m.	6.0-hours
AKN.43	July 04	9:30 a.m.	to	July 04	2:30 p.m.	5.0-hours
AKN.47	July 04	11:30 p.m.	to	July 05	4:30 a.m.	5.0-hours

-continued-

Table 8.–Page 4 of 8.

Number[a]	Start Date	Start Time		End Date	End Time	Effective Time
AKN.47	July 05	10:30 a.m.	to	July 05	3:30 p.m.	5.0-hours
AKN.51	July 06	12:00 a.m.	to	July 06	7:30 a.m.	7.5-hours
AKN.51	July 06	11:30 a.m.	to	July 06	6:00 p.m.	6.5-hours
AKN.54	July 07	12:30 a.m.	to	July 07	8:30 a.m.	8.0-hours
AKN.54	July 07	12:30 p.m.	to	July 07	8:30 p.m.	8.0-hours
AKN.58	July 08	1:30 a.m.	to	July 08	9:30 a.m.	8.0-hours
AKN.58	July 08	1:30 p.m.	to	July 08	9:30 p.m.	8.0-hours
AKN.61	July 09	1:30 a.m.	to	July 09	9:30 a.m.	8.0-hours
AKN.61	July 09	1:30 p.m.	to	July 09	9:30 p.m.	8.0-hours
AKN.66	July 10	2:30 p.m.	to	July 10	10:30 p.m.	8.0-hours
Set Net						
AKN.01	June 01	12:00 a.m.	to	June 16	9:00 a.m.	weekly schedule
AKN.05	June 17	6:00 a.m.	to	June 17	2:00 p.m.	8.0-hours
AKN.09	June 19	8:00 a.m.	to	June 19	4:00 p.m.	8.0-hours
AKN.13	June 21	10:00 a.m.	to	June 21	6:00 p.m.	8.0-hours
AKN.22	June 26	3:30 p.m.	to	June 26	11:30 p.m.	8.0-hours
AKN.26	June 27	4:00 p.m.	to	June 28	12:00 a.m.	8.0-hours
AKN.28	June 28	5:30 p.m.	to	June 28	1:30 a.m.	8.0-hours
AKN.30	June 30	6:15 a.m.	to	June 30	2:15 p.m.	7.0-hours
AKN.32	July 01	7:00 a.m.	to	July 01	3:00 p.m.	8.0-hours
AKN.35	July 02	7:30 a.m.	to	July 02	3:30 p.m.	8.0-hours [h]
AKN.39	July 03	9:30 a.m.	to	July 03	5:30 p.m.	8.0-hours
AKN.41	July 03	8:30 a.m.	to	July 03	4:30 p.m.	8.0-hours
AKN.43	July 04	9:30 a.m.	to	July 04	5:30 p.m.	8.0-hours
AKN.47	July 05	10:30 a.m.	to	July 05	6:30 p.m.	8.0-hours
AKN.51	July 05	6:30 p.m.	to	July 06	7:30 a.m.	13.0-hours
AKN.52	July 06	11:30 a.m.	to	July 06	7:30 p.m.	8.0-hours
AKN.54	July 07	12:30 a.m.	to	July 07	8:30 a.m.	8.0-hours
AKN.54	July 07	12:30 p.m.	to	July 07	8:30 p.m.	8.0-hours
AKN.58	July 08	1:30 a.m.	to	July 08	9:30 a.m.	8.0-hours
AKN.58	July 08	1:30 p.m.	to	July 08	9:30 p.m.	8.0-hours
AKN.61	July 09	1:30 a.m.	to	July 09	9:30 a.m.	8.0-hours
AKN.61	July 09	1:30 p.m.	to	July 09	9:30 p.m.	8.0-hours
AKN.66	July 10	2:30 p.m.	to	July 10	10:30 p.m.	8.0-hours
AKN.66	July 11	2:30 a.m.	to	July 11	10:30 a.m.	8.0-hours [I]
Ugashik District						
Drift Net						
AKN.02	June 01	12:00 a.m.	to	June 16	12:00 a.m.	weekly schedule
AKN.02	June 17	6:00 a.m.	to	June 17	6:00 p.m.	12.0-hours
AKN.02	June 20	8:30 a.m.	to	June 20	8:30 p.m.	12.0-hours
AKN.02	June 21	9:30 a.m.	to	June 21	9:30 a.m.	12.0-hours
AKN.02	June 22	10:30 a.m.	to	June 22	10:30 a.m.	12.0-hours
AKN.36	July 02	7:00 a.m.	to	July 02	5:00 p.m.	10.0-hours
AKN.40	July 03	8:00 a.m.	to	July 03	4:00 p.m.	8.0-hours
AKN.44	July 04	9:00 a.m.	to	July 04	3:00 p.m.	6.0-hours
AKN.48	July 05	12:00 p.m.	to	July 05	4:00 p.m.	4.0-hours
AKN.55	July 07	1:00 p.m.	to	July 07	9:00 p.m.	8.0-hours

-continued-

Table 8.–Page 5 of 8.

Number[a]	Start Date	Start Time		End Date	End Time	Effective Time
AKN.59	July 08	1:30 p.m.	to	July 08	9:30 p.m.	8.0-hours
AKN.62	July 09	3:00 p.m.	to	July 09	8:00 p.m.	5.0-hours
AKN.69	July 11	2:30 p.m.	to	July 11	8:30 p.m.	6.0-hours [d]
AKN.69	July 12	5:00 a.m.	to	July 12	11:00 a.m.	6.0-hours
AKN.74	July 13	5:00 a.m.	to	July 13	3:30 p.m.	10.5-hours
AKN.78	July 14	4:30 a.m.	to	July 14	3:00 p.m.	10.5-hours
AKN.81	July 15	5:00 a.m.	to	July 15	3:00 p.m.	10.0-hours
AKN.84	July 16	5:30 a.m.	to	July 16	3:30 p.m.	10.0-hours
AKN.84	July 17	6:00 a.m.	to	July 17	2:00 p.m.	8.0-hours
Set Net						
AKN.02	June 01	12:00 a.m.	to	June 16	12:00 a.m.	weekly schedule
AKN.02	June 17	6:00 a.m.	to	June 17	6:00 p.m.	12.0-hours
AKN.02	June 20	8:30 a.m.	to	June 20	8:30 p.m.	12.0-hours
AKN.02	June 21	9:30 a.m.	to	June 21	9:30 a.m.	12.0-hours
AKN.02	June 22	10:30 a.m.	to	June 22	10:30 a.m.	12.0-hours
AKN.36	July 02	7:00 a.m.	to	July 02	7:00 p.m.	12.0-hours
AKN.40	July 03	8:00 a.m.	to	July 03	6:00 p.m.	10.0-hours
AKN.44	July 04	9:00 a.m.	to	July 04	5:00 p.m.	8.0-hours [d]
AKN.48	July 05	10:00 a.m.	to	July 05	6:00 p.m.	8.0-hours
AKN.55	July 07	12:00 p.m.	to	July 07	10:00 p.m.	10.0-hours
AKN.59	July 08	12:30 p.m.	to	July 08	10:30 p.m.	10.0-hours
AKN.62	July 09	1:00 p.m.	to	July 09	9:00 p.m.	8.0-hours
AKN.69	July 11	2:30 p.m.	to	July 12	11:00 a.m.	21.5-hours [d]
AKN.74	July 13	3:30 a.m.	to	July 13	3:30 p.m.	12.0-hours
AKN.78	July 14	4:30 a.m.	to	July 14	4:30 p.m.	12.0-hours
AKN.81	July 15	5:00 a.m.	to	July 15	3:00 p.m.	10.0-hours
AKN.84	July 16	5:30 a.m.	to	July 16	3:30 p.m.	10.0-hours
AKN.84	July 17	6:00 a.m.	to	July 17	2:00 p.m.	8.0-hours
Nushagak District						
Nushagak Section						
Drift Net						
DLG.01	June 01	7:00 a.m.	to	June 01	3:00 p.m.	8.0-hours
DLG.03	June 3	9:30 a.m.	to	June 3	7:30 p.m.	10.0-hours
DLG.06	June 06	12:30 p.m.	to	June 06	10:30 p.m.	10.0-hours
DLG.09	June 09	3:00 p.m.	to	June 09	9:00 p.m.	6.0-hours
DLG.11	June 12	5:30 p.m.	to	June 12	11:30 p.m.	6.0-hours
DLG.14	June 16	8:00 a.m.	to	June 16	11:00 a.m.	3.0-hours [d]
DLG.22	June 20	11:00 a.m.	to	June 20	4:00 p.m.	5.0-hours
DLG 24	June 21	3:00 p.m.	to	June 21	7:00 p.m.	4.0-hours
DLG.26	June 23	5:30 p.m.	to	June 23	9:30 p.m.	4.0-hours
DLG.28	June 24	11:00 a.m.	to	June 24	4:00 p.m.	5.0-hours
DLG.30	June 25	8:00 a.m.	to	June 25	12:00 p.m.	4.0-hours
DLG.30	June 25	8:00 p.m.	to	June 26	1:00 a.m.	5.0-hours
DLG.31	June 26	9:00 a.m.	to	June 26	2:00 p.m.	5.0-hours [j]
DLG.32	June 26	8:00 p.m.	to	June 27	2:00 a.m.	6.0-hours [j]
DLG.32	June 27	9:30 a.m.	to	June 27	2:30 p.m.	5.0-hours [j]
DLG.33	June 27	10:00 p.m.	to	June 28	2:00 a.m.	4.0-hours [j]
DLG.33	June 28	10:30 a.m.	to	June 28	3:30 p.m.	5.0-hours [j]

-continued-

Table 8.–Page 6 of 8.

Number[a]	Start Date	Start Time		End Date	End Time	Effective Time
DLG.34	June 28	11:00 p.m.	to	June 29	3:00 a.m.	4.0-hours [j]
DLG.34	June 29	11:30 a.m.	to	June 29	4:30 p.m.	5.0-hours [j]
DLG.35	June 30	12:30 p.m.	to	June 30	5:30 p.m.	5.0-hours
DLG.38	July 1	1:00 a.m.	to	July 1	9:00 a.m.	8.0-hours
DLG.38	July 1	1:00 p.m.	to	July 1	9:00 p.m.	8.0-hours
DLG.39	July 2	1:00 a.m.	to	July 2	9:00 a.m.	8.0-hours
DLG.39	July 2	1:00 p.m.	to	July 2	9:00 p.m.	8.0-hours
DLG.40	July 3	12:00 a.m.	to	July 3	8:00 a.m.	8.0-hours
DLG.40	July 3	11:00 a.m.	to	July 3	8:00 p.m.	9.0-hours
DLG.41	July 4	12:00 a.m.	to	July 4	8:00 a.m.	8.0-hours
DLG.41	July 4	11:00 a.m.	to	July 4	8:00 p.m.	9.0-hours
DLG.43	July 5	1:00 a.m.	to	July 5	9:00 a.m.	8.0-hours
DLG.43	July 5	12:00 p.m.	to	July 5	9:00 p.m.	9.0-hours
DLG.44	July 6	2:00 a.m.	to	July 6	8:00 a.m.	6.0-hours
DLG.44	July 6	1:00 p.m.	to	July 6	9:00 p.m.	8.0-hours
DLG.45	July 7	1:00 a.m.	to	July 7	9:00 a.m.	8.0-hours
DLG.45	July 7	1:00 p.m.	to	July 7	9:00 p.m.	8.0-hours
DLG.46	July 8	1:00 a.m.	to	July 8	9:00 a.m.	8.0-hours
DLG.46	July 8	1:00 p.m.	to	July 8	9:00 p.m.	8.0-hours
DLG.48	July 9	1:00 a.m.	to	July 9	9:00 a.m.	8.0-hours
DLG.48	July 9	1:00 p.m.	to	July 9	9:00 p.m.	8.0-hours
DLG.49	July 10	1:00 a.m.	to	July 10	9:00 a.m.	8.0-hours
DLG.49	July 10	1:00 p.m.	to	July 10	9:00 p.m.	8.0-hours
DLG.50	July 11	1:00 a.m.	to	July 11	9:00 a.m.	8.0-hours
DLG.50	July 11	1:00 p.m.	to	July 11	9:00 p.m.	8.0-hours
DLG.51	July 12	1:00 a.m.	to	July 12	9:00 a.m.	8.0-hours
DLG.51	July 12	1:00 p.m.	to	July 12	9:00 p.m.	8.0-hours
DLG.52	July 13	1:00 a.m.	to	July 13	9:00 a.m.	8.0-hours
DLG.52	July 13	1:00 p.m.	to	July 13	9:00 p.m.	8.0-hours
DLG.52	July 14	1:00 a.m.	to	July 14	9:00 a.m.	8.0-hours
DLG.52	July 14	1:00 p.m.	to	July 14	9:00 p.m.	8.0-hours
DLG.52	July 15	1:00 a.m.	to	July 15	9:00 a.m.	8.0-hours [k]
DLG.52	July 15	1:00 p.m.	to	July 15	9:00 p.m.	8.0-hours
DLG.52	July 16	1:00 a.m.	to	July 16	9:00 a.m.	8.0-hours
DLG.52	July 16	1:00 p.m.	to	July 16	9:00 p.m.	8.0-hours
DLG.52	July 17	1:00 a.m.	to	July 17	9:00 a.m.	8.0-hours
DLG.52	July 17	1:00 p.m.	to	July 17	9:00 p.m.	8.0-hours
DLG.53	July 17	9:00 p.m.	to	July 23	9:00 p.m.	144.0-hours
DLG.54	July 23	9:00 p.m.	to	July 27	12:00 p.m.	87.0-hours
DLG.54	July 28	5:00 a.m.	to	July 28	11:00 p.m.	36.0-hours
DLG.57	August 10	7:00 a.m.	to	August 10	7:00 p.m.	12.0-hours
DLG.58	August 25	7:00 a.m.	to	August 25	7:00 p.m.	12.0-hours
Set Net						
DLG.01	June 01	7:00 a.m.	to	June 01	3:00 p.m.	8.0-hours
DLG.06	June 06	12:30 p.m.	to	June 06	10:30 p.m.	10.0-hours
DLG.09	June 09	3:00 p.m.	to	June 09	9:00 p.m.	6.0-hours
DLG.11	June 12	5:30 p.m.	to	June 12	11:30 p.m.	6.0-hours
DLG.14	June 16	8:00 a.m.	to	June 16	11:00 a.m.	3.0-hours [e]

-continued-

Table 8.–Page 7 of 8.

Number[a]	Start Date	Start Time		End Date	End Time	Effective Time
DLG.22	June 20	11:00 a.m.	to	June 20	4:00 p.m.	5.0-hours [e]
DLG 24	June 21	11:00 a.m.	to	June 21	7:00 p.m.	8.0-hours [l]
DLG.26	June 23	1:30 p.m.	to	June 23	9:30 p.m.	8.0-hours [m]
DLG.31	June 26	2:00 a.m.	to	June 26	2:00 p.m.	12.0-hours [n]
DLG.32	June 26	5:00 p.m.	to	June 27	1:00 p.m.	20.0-hours
DLG.33	June 27	6:00 p.m.	to	June 28	3:00 p.m.	21.0-hours
DLG.34	June 28	7:00 p.m.	to	June 29	4:00 p.m.	21.0-hours [j]
DLG.35	June 29	8:30 p.m.	to	June 30	5:30 p.m.	21.0-hours
DLG.36	June 30	5:30 p.m.				[j]
DLG.54	July 23	9:00 p.m.	to	July 27	12:00 p.m.	87.0-hours [j]
DLG.54	July 28	5:00 a.m.	to	July 28	11:00 p.m.	36.0-hours [j]
DLG.57	August 10	7:00 a.m.	to	August 10	7:00 p.m.	12.0-hours [j]
DLG.58	August 25	7:00 a.m.	to	August 25	7:00 p.m.	12.0-hours [j]
Igushik Section						
Drift Net						
DLG.01	June 01	7:00 a.m.	to	June 01	3:00 p.m.	8.0-hours
DLG.03	June 3	9:30 a.m.	to	June 3	7:30 p.m.	10.0-hours
DLG.06	June 06	12:30 p.m.	to	June 06	10:30 p.m.	10.0-hours
DLG.09	June 09	3:00 p.m.	to	June 09	9:00 p.m.	6.0-hours [e,o]
DLG.11	June 12	5:30 p.m.	to	June 12	11:30 p.m.	6.0-hours [e]
DLG.14	June 16	8:00 a.m.	to	June 16	11:00 a.m.	3.0-hours [l]
DLG.22	June 20	11:00 a.m.	to	June 20	4:00 p.m.	5.0-hours [m]
DLG.46	July 8	3:00 p.m.	to	July 8	9:00 p.m.	6.0-hours [n]
DLG.48	July 9	1:00 p.m.	to	July 9	9:00 p.m.	8.0-hours
DLG.49	July 10	1:00 p.m.	to	July 10	9:00 p.m.	8.0-hours
DLG.50	July 11	1:00 p.m.	to	July 11	9:00 p.m.	8.0-hours
DLG.51	July 12	1:00 a.m.	to	July 12	9:00 a.m.	8.0-hours
DLG.51	July 12	1:00 p.m.	to	July 12	9:00 p.m.	8.0-hours [j]
DLG.52	July 13	1:00 a.m.	to	July 13	9:00 a.m.	8.0-hours [j]
DLG.52	July 13	1:00 p.m.	to	July 13	9:00 p.m.	8.0-hours [j]
DLG.52	July 14	1:00 a.m.	to	July 14	9:00 a.m.	8.0-hours [j]
DLG.52	July 14	1:00 p.m.	to	July 14	9:00 p.m.	8.0-hours [j]
DLG.52	July 15	1:00 a.m.	to	July 15	9:00 a.m.	8.0-hours [j]
DLG.52	July 15	1:00 p.m.	to	July 15	9:00 p.m.	8.0-hours [j]
DLG.52	July 16	1:00 a.m.	to	July 16	9:00 a.m.	8.0-hours
DLG.52	July 16	1:00 p.m.	to	July 16	9:00 p.m.	8.0-hours [k]
DLG.52	July 17	1:00 a.m.	to	July 17	9:00 a.m.	8.0-hours
DLG.52	July 17	1:00 p.m.	to	July 17	9:00 p.m.	8.0-hours
DLG.53	July 17	9:00 p.m.	to	July 23	9:00 p.m.	144.0-hours
DLG.54	July 23	9:00 p.m.	to	July 27	12:00 p.m.	87.0-hours
DLG.54	July 28	5:00 a.m.	to	July 28	11:00 p.m.	36.0-hours
DLG.57	August 10	7:00 a.m.	to	August 10	7:00 p.m.	12.0-hours
DLG.58	August 25	7:00 a.m.	to	August 25	7:00 p.m.	12.0-hours
Igushik Section						
Set Net						
DLG.01	June 01	7:00 a.m.	to	June 01	3:00 p.m.	8.0-hours
DLG.03	June 3	9:30 a.m.	to	June 3	7:30 p.m.	10.0-hours
DLG.06	June 06	12:30 p.m.	to	June 06	10:30 p.m.	10.0-hours

-continued-

Table 8.–Page 8 of 8.

Number[a]	Start Date	Start Time		End Date	End Time	Effective Time
DLG.09	June 09	3:00 p.m.	to	June 09	9:00 p.m.	6.0-hours [e]
DLG.11	June 12	5:30 p.m.	to	June 12	11:30 p.m.	6.0-hours [e]
DLG.14	June 16	8:00 a.m.	to	June 16	11:00 a.m.	3.0-hours
DLG.16	June 17	8:30 a.m.	to	June 17	4:30 p.m.	8.0-hours [l]
DLG.20	June 18	9:30 a.m.	to	June 18	5:30 p.m.	8.0-hours [m]
DLG.21	June 19	10:30 a.m.	to	June 19	6:30 p.m.	8.0-hours [n]
DLG.22	June 20	11:00 a.m.	to	June 20	7:00 p.m.	8.0-hours
DLG.22	June 20	11:00 a.m.	to	June 20	4:00 p.m.	5.0-hours
DLG.25	June 22	12:30 p.m.	to	June 22	8:30 p.m.	8.0-hours
DLG.26	June 23	1:30 p.m.	to	June 23	9:30 p.m.	8.0-hours [j]
DLG.32	June 26	5:00 p.m.	to	June 27	1:00 p.m.	20.0-hours [j]
DLG.33	June 27	6:00 p.m.	to	June 28	2:00 a.m.	8.0-hours [j]
DLG.34	June 28	7:00 p.m.	to	June 29	7:00 a.m.	12.0-hours [j]
DLG.35	June 29	8:30 p.m.	to	June 30	8:30 a.m.	12.0-hours [j]
DLG.36	July 1	8:30 a.m.	to	July 1	4:30 p.m.	8.0-hours [j]
DLG.39	July 2	9:30 a.m.	to	July 2	5:30 p.m.	8.0-hours [b]
DLG.40	July 3	10:30 a.m.	to	July 3	6:30 p.m.	8.0-hours [b]
DLG.41	July 4	12:00 a.m.	to	July 4	8:00 a.m.	8.0-hours [b]
DLG.41	July 4	11:30 a.m.	to	July 4	7:30 p.m.	8.0-hours [b]
DLG.43	July 5	1:00 a.m.	to	July 5	9:00 a.m.	8.0-hours [j]
DLG.43	July 5	12:30 p.m.	to	July 5	8:30 p.m.	8.0-hours
DLG.44	July 6	1:30 a.m.	to	July 6	9:30 a.m.	8.0-hours
DLG.44	July 6	1:00 p.m.	to	July 6	9:00 p.m.	8.0-hours
DLG.45	July 6	9:00 p.m.				
DLG.54	July 23	9:00 p.m.	to	July 27	12:00 p.m.	87.0-hours
DLG.54	July 28	5:00 a.m.	to	July 28	11:00 p.m.	36.0-hours
DLG.57	August 10	7:00 a.m.	to	August 10	7:00 p.m.	12.0-hours
DLG.58	August 25	7:00 a.m.	to	August 25	7:00 p.m.	12.0-hours
Togiak District						
Drift and Set Net						
DLG.17	June 20	9:00 a.m.	to	June 22	9:00 a.m.	48.0-hours [b,p]
DLG.17	June 20	9:00 a.m.	to	June 23	9:00 a.m.	72.0-hours [b,p]
DLG.29	June 27	9:00 a.m.	to	June 29	9:00 a.m.	48.0-hours [b,p]
DLG.29	June 27	9:00 a.m.	to	June 29	9:00 a.m.	48.0-hours [b,p]
DLG.29	July 1	9:00 a.m.	to	July 2	9:00 p.m.	36.0-hours [b,p]
DLG.42	July 4	9:00 a.m.	to	July 6	9:00 a.m.	48.0-hours [b,p]
DLG.47	July 11	9:00 a.m.	to	July 13	9:00 a.m.	48.0-hours [b,p]
DLG.55	July 25	9:00 a.m.	to	July 28	9:00 a.m.	72.0-hours [p]

[a] Prefix code on emergency orders indicate where announcement originated. ("AKN" for King Salmon field office and "DLG" for Dillingham field office.)
[b] Gillnet mesh size is restricted to 5 and 1/2 inches or less.
[c] The 48-hour waiting period waived effective 9:00 a.m. July 13.
[d] Weekly schedule: 9:00 a.m. Monday until 9:00 a.m. Friday.
[e] Extends current fishing period.
[f] Supersedes previous emergency order.
[g] The 48-hour waiting period waived effective 4:00 a.m. July 11.
[h] Weekly schedule: 9:00 a.m. Monday to 9:00 a.m. Wednesday and 9:00 a.m. Thursday to 9:00 a.m. Friday.
[i] Supersedes E.O. 2F-T-39-05.
[j] Gillnet mesh size is restricted to 7 and 1/2 inches or larger.
[k] The 48-hour waiting period waived effective 9:00 a.m. July 9.
[l] Weekly schedule: 5:00 a.m. until 11:00 p.m. Monday and Thursday, until further notice.
[m] Weekly schedule: 7:00 a.m. until 7:00 p.m. Monday, Wednesday and Friday, until further notice.
[n] Weekly schedule: 7:00 a.m. until 7:00 p.m. 7 days a week, until further notice.
[o] Opens commercial fishing until further notice.
[p] Reduced the weekly fishing schedule in sections of the Togiak District.

Table 9.–Daily district registration of drift gillnet permit holders by district, Bristol Bay, 2005.

Date	Naknek-Kvichak	Egegik	Ugashik	Nushagak	Togiak	Total
6/20	47	249	61	349	25	731
6/21	74	382	53	394	26	929
6/22	81	361	53	443	27	965
6/23	99	371	25	560	33	1,088
6/24	110	365	25	645	38	1,183
6/25	138	366	25	678	42	1,249
6/26[a]						-
6/27	199	433	27	616	43	1,318
6/28	206	453	30	601	45	1,335
6/29	220	512	33	598	45	1,408
6/30	222	522	43	599	46	1,432
7/01	232	515	46	599	50	1,442
7/02	234	490	58	592	50	1,424
7/03	238	467	66	594	51	1,416
7/04	240	451	107	555	51	1,404
7/05	243	373	135	525	51	1,327
7/06	246	345	192	516	52	1,351
7/07	256	316	294	514	52	1,432
7/08	270	310	313	507	53	1,453
7/09	286	295	324	496	54	1,455
7/10	297	262	323	483	54	1,419
7/11	311	251	326	500	54	1,442
7/12 [a]						-
7/13	469	250	282	451	55	1,507
7/14	593	195	248	423	58	1,517
7/15	652	197	215	401	60	1,525
7/16[a]						-
7/17[a]						-
Average	**248**	**364**	**138**	**527**	**46**	**1,134**

[a] Registration information not available.

Table 10.–Commercial salmon catch by date and species, in numbers of fish, Naknek-Kvichak District, Bristol Bay, 2005.

Date		Hours fished		Deliveries		Sockeye	Chinook	Chum	Pink	Coho	Total
		Drift	Set	Drift	Set						
6/20	a,b	5.0	8.0	27	99	10,465	30	80	0	0	10,575
6/21	a	5.5	8.0	6	67	1,362	6	0	0	0	1,368
6/22	b					993	0	4	0	0	997
6/24	b					1,105	0	7	0	0	1,112
6/25	a	5.0	0	167	0	85,912	7	319	0	0	86,238
6/26	a	6.5	8.0	183	184	63,855	52	450	0	0	64,357
6/27	a,b	8.0	6.5	194	292	91,883	37	206	0	0	92,126
6/28	a	7.5	6.5	290	0	141,771	36	484	0	0	142,291
6/29	a,b	6.5	7.5	145	388	233,692	40	777	0	0	234,509
6/30	a	0	7.5	194	443	309,366	20	1,087	0	0	310,473
7/01	a	7.5	7.5	440	0	411,019	34	2,107	0	0	413,160
7/02	a	8.0	7.0	224	452	295,260	29	681	0	0	295,970
7/03	c	8.0	7.0/3.0	228	433	307,678	21	957	0	0	308,656
7/04	c	8.0/6.5	4.0/2.5	465	51	324,028	34	1,040	0	0	325,102
7/05	c	8.5/6.5	5.0/2.0	463	65	478,479	34	1,777	0	0	480,290
7/06	c	8.5/6.0	4.5/2.0	479	81	454,747	68	2,975	0	0	457,790
7/07	c	6.0	8.5/5.0/2.0	263	427	254,007	25	1,225	0	0	255,257
7/08	c	8.5/6.5	5.0/2.0	497	63	402,801	69	2,717	0	0	405,587
7/09	c	5.5	8.5/4.4/2.0	264	315	308,057	13	1,206	0	0	309,276
7/10	c	8.0/5.5	5.0/2.5	532	49	345,660	53	3,350	0	0	349,063
7/11	c,d	8.0	9.0/5.5/4.0	243	357	179,210	25	2,324	0	0	181,559
7/12	c,e	8.5/7.0	8/7/6/4	264	361	141,669	52	6,226	1	0	147,948
7/13	c,e	8.5/6.0	8.5/6/5/4.5	554	271	356,576	77	24,911	0	0	381,564
7/14	c,e	8.0/6.0	24/8/6/5.5	690	280	387,001	79	18,405	0	0	405,485
7/15	c,e	7.0/7.0	24/7/7/5.5	619	227	268,733	91	19,082	2	0	287,908
7/16	a,e	6.5/7.0	24/6.5/7	472	242	348,304	53	21,917	3	0	370,277
7/17	a,e	7.0	15/7.0	461	167	139,787	37	10,199	0	0	150,023
7/18	e	15.0	15.0	180	19	91,818	33	16,013	0	1	107,865
7/19	e	24.0	24.0	230	63	108,633	52	3,824	4	6	112,519
7/20	e	24.0	24.0	144	61	54,895	58	22,118	8	1	77,080
7/21	e	24.0	24.0	113	68	53,537	46	13,602	4	17	67,206
7/22	e	9.0	9.0	52	21	16,782	19	5,464	0	15	16,782
7/25	e	15.0	15.0	29	33	9,748	18	4,048	1	12	13,827
7/26	e	24.0	24.0	16	50	7,554	14	2,662	0	5	10,235
7/27	e	24.0	24.0	16	49	8,648	3	1,800	1	42	10,494
7/28	e	24.0	24.0	15	56	5,689	22	2,299	0	252	8,262
7/29	e	9.0	9.0	7	12	1,522	0	673	0	108	2,303
8/01	e	15.0	15.0	1	9	261	1	48	3	57	370
8/02	e	24.0	24.0	4	33	1,199	11	104	0	192	1,506
8/03	e	24.0	24.0	2	19	1,281	0	115	0	209	1,605
8/04	e	24.0	24.0	2	14	692	2	64	0	167	925

-continued-

Table 10.–Page 2 of 2.

Date		Hours Fished		Deliveries		Sockeye	Chinook	Chum	Pink	Coho	Total
		Drift	Set	Drift	Set						
8/05	[e]	9.0	9.0	0	4	187	0	0	0	9	196
8/08	[e]	15.0	15.0	0	4	49	0	4	0	19	72
8/09	[e]	24.0	24.0	0	13	290	1	60	2	142	495
8/10	[e]	24.0	24.0	2	6	60	0	38	0	225	323
8/11	[e]	24.0	24.0	1	3	18	1	20	0	307	346
8/12	[e,f]	9.0	9.0								
8/15	[e,f]	15.0	15.0								
8/16	[e,f]	24.0	24.0								
8/17	[e,f]	24.0	24.0								
8/18	[e,f]	24.0	24.0								
8/19	[e,f]	24.0	24.0								
Total						**6,706,386**	**1,303**	**197,479**	**32**	**3,308**	**6,903,010**

[a] Fishery was open in the Naknek River Special Harvest Area (NRSHA).

[b] District test fish.

[c] Fishery was open in the Alagnak River Special Harvest Area and NRSHA.

[d] Fishery was opened in the Naknek Section.

[e] Fishery was opened in the Naknek/Kvichak District.

[f] Less than 4 permit holders fished, harvest confidential.

Table 11.–Commercial salmon catch by date and species, in numbers of fish, Egegik District, Bristol Bay, 2005.

	Hours fished[a]		Deliveries[b]							
Date	Drift	Set	Drift	Set	Sockeye	Chinook	Chum	Pink	Coho	Total
6/13	15	15	50	63	17,298	31	401	0	0	17,730
6/14	24	24	71	72	18,930	15	314	0	0	19,259
6/15	9	9	38	11	4,930	3	95	0	0	5,028
6/17	8	8	172	77	53,227	12	354	0	0	53,593
6/19	6	8	248	77	43,322	18	424	0	0	43,764
6/21	5.5	8	108	115	21,311	44	206	0	0	21,561
6/26	4	8	432	304	942,473	39	10,470	0	0	952,982
6/27	5	8	402	252	603,708	20	3,247	0	0	606,975
6/28	4	6.5	511	240	519,024	26	3,560	0	0	522,610
6/29	3	1.5	516	0	217,284	9	1,237	0	0	218,530
6/30	8	8	881	203	477,067	17	1,874	0	0	478,958
7/01	9	8	902	237	829,584	45	3,624	0	0	833,253
7/02	6	8	557	96	316,082	7	2,080	0	0	318,169
7/03	8.5	8	468	252	532,149	11	3,596	0	0	535,756
7/04	10	8	784	206	395,430	30	1,832	0	0	397,292
7/05	10.5	13.5	646	219	375,958	35	1,382	0	0	377,375
7/06	14	15.5	606	367	404,384	13	2,068	0	0	406,465
7/07	16	16	552	328	521,518	21	2,154	0	0	523,693
7/08	16	16	462	368	377,623	12	2,729	0	0	380,364
7/09	16	16	383	290	227,490	14	1,910	0	0	229,414
7/10	16	16	369	257	235,613	19	1,539	0	0	237,171
7/11	14.5	16	431	305	322,916	11	3,138	0	0	326,065
7/12	8	8	313	120	76,011	8	1,416	0	0	77,435
7/13	13	8	249	79	77,541	3	1,704	0	0	79,248
7/14	14.5	8	196	82	74,933	1	1,873	0	0	76,807
7/15	13.5	8	173	56	88,872	4	2,792	0	0	91,668
7/16	12.5	12.5	101	86	65,397	6	1,231	0	0	66,634
7/17	14	14	98	88	57,723	4	1,034	0	0	58,761
7/18	15	15	66	41	34,334	2	1,085	0	0	35,421
7/19	24	24	58	65	33,133	8	1,034	0	0	34,175
7/20	24	24	29	47	16,307	4	622	0	0	16,933
7/21	24	24	22	38	12,736	2	701	0	0	13,439
7/22	9	9	6	11	1,816	2	106	0	0	1,924
7/25	15	15	13	12	4,050	1	406	0	0	4,457
7/26	24	24	5	8	1,247	0	122	0	0	1,369
7/27	24	24	2	2	842	0	0	0	0	842
8/01	14	15	5	3	521	0	175	0	580	1,276
8/02	23	24	5	3	379	1	106	0	437	923
8/03[c]	24	24								
8/04	24	24	3	2	185	0	85	0	305	575
8/08	15	15	4	5	365	0	125	0	1,496	1,986
8/10	24	24	3	3	113	0	140	0	1,912	2,165
8/11	24	24	3	3	100	0	120	0	2,419	2,639
8/15	15	15	4	3	19	0	12	0	2,856	2,887
8/16	24	24	3	3	0	0	0	0	1,564	1,564
8/18	24	24	4	3	7	0	5	0	1,871	1,883
8/22	15	15	2	3	0	0	0	0	1,118	1,118
8/23[c]	24	24								

-continued-

Table 11.–Page 2 of 2.

	Hours fished[a]		Deliveries[b]							
Date	**Drift**	**Set**	**Drift**	**Set**	**Sockeye**	**Chinook**	**Chum**	**Pink**	**Coho**	**Total**
8/24	24	24	2	2	0	0	0	0	1,757	1,757
8/25	24	24	2	2	0	0	0	0	1,277	1,277
8/31	24	24	2	4	0	0	0	0	2,361	2,361
9/01	24	24	2	4	0	0	0	0	1,867	1,867
Total					**8,004,125**	**498**	**63,164**	**0**	**22,145**	**8,089,932**

[a] For hours fished: first number is drift, second number is set gillnet, one number both gear groups equal time.

[b] Number of deliveries.

[c] Less than 4 permits, records are confidential.

Table 12.–Commercial salmon catch by date and species, in numbers of fish, Ugashik District, Bristol Bay, 2005.

Date	Hours fished [b]	Deliveries [a]		Sockeye	Chinook	Chum	Pink	Coho	Total
		Drift	Set						
6/09 [c]	24								
6/10 [c]	9								
6/13	15	20		2,766	54	36	0	0	2,856
6/14	24	45		7,375	57	163	0	0	7,595
6/15	24	74		8,077	66	160	0	0	8,303
6/17	12	51	1	6,079	23	112	0	0	6,214
6/20	12	34	5	1,740	29	192	0	0	1,961
6/21	12	8	2	245	7	44	0	0	296
6/22	12	2	2	447	0	81	0	0	528
7/02	10/12	41	63	78,338	18	630	0	0	78,986
7/03	8/10	51	70	62,465	59	727	0	0	63,251
7/04	6/8	84	54	61,472	63	795	0	0	62,330
7/05	4/8	113	51	114,099	101	1,512	1		115,713
7/06 [d]				2,184	0	0	0	0	
7/07	8/10	226	89	314,746	38	2,035	0	0	316,819
7/08	8/10	226	94	314,121	62	2,837	0	0	317,020
7/09	5/8	328	78	385,449	45	2,483	0	0	387,977
7/10 [d]				484	0	0	0	0	
7/11	6/9.5	254	73	126,096	92	2,080	0	0	128,268
7/12	6/11	228	63	48,302	66	1,202	0	0	49,570
7/13	10.5/12	202	63	115,698	115	3,852	0	0	119,665
7/14	10.5/12	173	49	111,763	103	2,643	0	0	114,509
7/15	10	156	40	101,984	48	3,551	0	0	105,583
7/16	10	122	31	41,146	70	1,347	0	0	42,563
7/17	8	73	13	82,035	64	2,791	0	0	84,890
7/18	15	89	24	54,649	156	4,818	0	0	59,623
7/19	24	73	57	65,409	187	2,804	0	0	68,400
7/20	24	67	45	52,696	106	1,286	0	2	54,090
7/21	24	56	36	32,510	67	1,600	0	0	34,177
7/22	9	11	10	4,119	1	242	0	0	4,362
7/25	15	7	10	4,112	29	182	0	0	4,323
7/26	24	9	1	3,539	5	111	0	0	3,655
8/08 [c]	24								
8/09 [c]	24								
8/11 [c]	24								
8/12 [c]	9								
8/15 [c]	15								
8/16 [c]	24								
8/17 [c]	24								
8/18 [c]	24								
8/19 [c]	9								
8/22 [c]	15								
8/23 [c]	24								
8/24 [c]	24								
8/25 [c]	24								
8/26 [c]	9								

-continued-

Table 12.–Page 2 of 2.

Date	Hours fished [b]	Deliveries [a] Drift	Deliveries [a] Set	Sockeye	Chinook	Chum	Pink	Coho	Total
8/29 [c]	15								
8/30 [c]	24								
8/31 [c]	24								
9/01 [c]	24								
9/02 [c]	9								
9/06 [c]	24								
9/07 [c]	24								
9/08 [c]	24								
9/09 [c]	9								
Total				**2,202,202**	**1,762**	**40,315**	**1**	**6,525**	**2,250,805**

[a] Number of deliveries.

[b] First number drift, second number set gillnet, one number represents both gear groups equal time.

[c] Less than 4 permits, records are confidential.

[d] Test fishing conducted.

Table 13.–Commercial salmon catch by date and species, in numbers of fish, Nushagak District, Bristol Bay, 2005.

	Hours fished[a]		Deliveries							
Date	**Nushagak**	**Igushik**	**Drift**	**Set**	**Sockeye**	**Chinook**	**Chum**	**Pink**	**Coho**	**Total**
6/01	8/8	8/8	27	0	0	689	0	0	0	689
6/03	10/10	10/10	19	0	0	295	0	0	0	295
6/06	10/10	10/10	60	4	9	6,592	4	0	0	6,605
6/09	6/6	6/6	82	2	10	2,161	17	0	0	2,188
6/12	6/6	6/6	160	7	148	7,032	354	0	0	7,534
6/16	3/3	3/3	151	7	1,289	9,207	2,645	0	0	13,141
6/17	0/0[b]	0/8	[c]							
6/18	0/0[b]	0/8	0	24	4,075	102	1	0	0	4,178
6/19	0/0[b]	0/8	0	21	1,814	35	0	0	0	1,849
6/20	5/5	5/8	232	80	14,373	4,027	6,755	0	0	25,155
6/21	4/8	0/8	313	107	100,178	3,429	53,076	2	0	156,685
6/22	0/0[b]	0/8	2	25	6,157	66	543	0	0	6,766
6/23	4/8	0/8	493	206	91,064	2,171	42,151	3	0	135,389
6/24	5/12	5/12	537	144	88,820	1,944	55,898	0	0	146,662
6/25	8/18	0/18	569	239	155,083	1,411	57,129	4	0	213,627
6/26	10/14	0/21	941	264	142,961	3,730	52,764	4	0	199,459
6/27	9/19	0/19	914	222	233,120	3,402	76,684	5	0	313,211
6/28	8/20	0/7	872	268	189,484	2,734	57,786	3	0	250,007
6/29	8/19.5	0/10.5	851	297	554,860	2,666	84,330	5	0	641,861
6/30	5/24	0/8.5	418	249	430,275	640	45,155	2	0	476,072
7/01	16/24	0/8	771	359	562,435	1,165	46,117	10	0	609,727
7/02	16/24	0/8	781	309	562,860	1,259	47,155	13	0	611,287
7/03	17/24	0/8	773	358	442,417	1,224	29,907	19	0	473,567
7/04	17/24	0/16	779	351	358,644	1,090	28,908	37	1	388,680
7/05	17/24	0/16	430	395	575,056	864	30,749	20	1	606,690
7/06	14/24	0/19	621	434	633,250	776	33,099	25	0	667,150
7/07	16/24	0/24	371	376	354,136	795	13,610	33	0	368,574
7/08	16/24	6/24	432	222	364,885	325	13,040	3	0	378,253
7/09	16/24	8/24	558	248	333,308	608	20,147	51	0	354,114
7/10	16/24	8/24	289	162	202,491	160	13,929	24	4	216,608
7/11	16/24	8/24	446	308	207,617	151	10,724	29	1	218,522
7/12	16/24	16/24	452	247	136,833	183	10,367	31	13	147,427
7/13	16/24	16/24	395	215	108,440	181	10,891	22	9	119,543
7/14	16/24	16/24	290	179	74,781	171	9,792	44	24	84,812
7/15	16/24	16/24	185	154	74,385	146	7,196	20	129	81,876
7/16	16/24	16/24	98	125	33,707	68	2,302	55	67	36,199
7/17	16/24	16/24	69	97	26,852	47	3,175	28	172	30,274
7/18	23/24	23/24	32	60	15,709	100	1,665	5	54	17,533
7/19	24 /24	24 /24	53	82	18,978	55	1,883	17	27	20,960
7/20	24 /24	24 /24	35	71	9,319	39	783	25	22	10,188

-continued-

Table 13.–Page 2 of 2.

	Hours fished[a]		Deliveries							
Date	**Nushagak**	**Igushik**	**Drift**	**Set**	**Sockeye**	**Chinook**	**Chum**	**Pink**	**Coho**	**Total**
7/21	24/24	24 /24	19	61	7,425	33	462	6	39	7,965
7/22	24/24	24 /24	20	24	6,214	19	1,965	6	734	8,938
7/23	24/24	24 /24	10	10	1,378	5	202	0	228	1,813
7/24	24/24	24 /24	0	18	1,972	0	71	0	74	2,117
7/25	24/24	24 /24	1	12	1,198	5	25	2	31	1,261
7/26	24/24	24 /24	2	18	1,325	8	157	1	368	1,859
7/27	24/24	24 /24	2	4	339	1	110	0	244	694
7/28	18/18	18/18	0	4	790	3	39	0	160	992
7/29	0/0	0 / 0 [c]								
8/01	18/18	18/18	15	9	494	10	108	0	342	954
8/04	18/18	18/18	9	8	185	8	105	0	5,836	6,134
8/05	0/0 [b]	0 / 0 [d]	4	0	19	2	34	0	3,606	3,661
8/08	12/12	12/12	17	5	100	9	49	0	1,350	1,508
8/10	12/12	12/12	20	5	55	0	16	0	10,855	10,926
8/12	12/12	12/12	17	3	63	2	11	0	2,551	2,627
8/15	12/12	12/12	22	3	96	5	2	0	11,457	11,560
8/17	12/12	12/12	22	1	51	0	0	0	3,591	3,642
8/19	12/12	12/12	7	1	0	0	0	0	911	911
8/22	12/12	12/12 [c]								
8/24	12/12	12/12 [c]								
Total					**7,132,280**	**61,854**	**874,090**	**554**	**43,019**	**8,111,797**

[a] For hours fished: first number is drift, second number is set gillnet.

[b] The Nushagak Section closed.

[c] Less than 4 permits, records are confidential.

[d] The Igushik Section closed.

Table 14.–Commercial sockeye salmon setnet harvest numbers by date and statistical area, Nushagak District, Bristol Bay, 2005.

	Harvest						
Date	Combine Flats	Queen Slough	Coffee Point	Clark's Point	Ekuk Beach	Igushik Beach	Total
6/06	0	0		0	0	0	
6/09	0		0		0	0	
6/12		0				0	
6/16			0		0	0	
6/17	0	0	0	0	0	747	747
6/18	0	0	0	0	0	4,075	4,075
6/19	0	0	0	0	0	1,814	1,814
6/20	899	119	122	13	87	1,593	2,833
6/21	6,494	295	698	0	2,538	1,576	11,601
6/22	0	0	0	0	0	5,788	5,788
6/23	19,603	2,623	8,995	381	1,312	2,443	35,357
6/24	2,643	245	2,133	238	1,403	934	7,596
6/25	4,211	1,665	476	776	14,519	2,379	24,026
6/26	2,923	346	629	925	6,634	1,570	13,027
6/27	787	57	247	649	5,068	7,353	14,161
6/28	5,830	369	583	2,761	11,044	7,256	27,843
6/29	10,550	145	1,209	2,259	16,856	4,533	35,552
6/30	47,478	313	3,302	4,090	10,224	5,408	70,815
7/01	12,637	3,615	4,874	5,243	45,178	13,506	85,053
7/02	3,926	226	1,432	3,780	37,272	4,309	50,945
7/03	14,579	707	929	9,685	41,817	6,243	73,960
7/04	3,859	409	508	3,069	21,557	13,568	42,970
7/05	22,986	2,007	1,215	11,180	37,355	11,022	85,765
7/06	37,691	2,952	2,293	13,776	39,366	10,924	107,002
7/07	56,445	8,501	1,482	5,641	14,923	7,498	94,490
7/08	637	602		7,278	25,351	10,623	44,627
7/09	13,538	0	2,018	3,160	19,733	6,203	44,652
7/10	14,226	2,018	2,839	3,384	3,170	4,631	30,268
7/11	14,718	1,926	5,892	5,445	12,475	7,643	48,099
7/12	3,247		4,907	1,127	17,771	5,547	32,632
7/13	2,108	20	564	580	12,040	3,975	19,287
7/14	2,687	0	180	674	7,977	1,339	12,857
7/15	1,561	23	699	580	13,731	0	16,594
7/16	3,342	551	767	1,673	10,978	0	17,311
7/17	1,866	202	386	862	7,574	0	10,890
7/18	211		0	299	7,904	0	8,439
7/19	331		358	660	8,374	0	9,815
7/20	73			473	5,188	0	5,885
7/21				229	5,076	0	5,423
7/22				1,535		0	3,333
7/23		0	0	754	0	0	782
7/24	273	0	0	1,699	0	0	1,972
7/25		0	0	746		0	1,161
7/26		0	0	342	717	0	1,189
7/27	0	0	0	23		0	180
7/28	790	0	0	0	0	0	790
7/29	0	0		0	0	0	

-continued-

Table 14.–Page 2 of 2.

	Harvest						
Date	**Combine Flats**	**Queen Slough**	**Coffee Point**	**Clark's Point**	**Ekuk Beach**	**Igushik Beach**	**Total**
8/01	0	0	0	80	310	0	390
8/04	0	0	0	26	59	0	85
8/08	0	0	0	0		0	
8/10	0	0	0			0	
8/12	0	0	0		0	0	
Total	**314,355**	**30,202**	**50,210**	**96,169**	**466,758**	**154,500**	**1,111,664**

Note: Blank cells represent days where there were less than 4 permit holders, therefore, data is confidential.

Table 15.–Commercial salmon catch by date and species, in numbers of fish, Togiak District, Bristol Bay, 2005.

Date[a]	Sockeye	Chinook	Chum	Pink	Coho	Total
6/08 [b]						
6/15 [b]						
6/16 [b]						
6/17 [b]						
6/20	1,342	295	206	0	0	1,843
6/21	2,032	405	564	2	0	3,003
6/22	2,285	380	690	2	0	3,357
6/23	808	195	170	1	0	1,174
6/27	8,914	1,103	2,983	52	0	13,052
6/28	11,320	688	3,965	45	0	16,018
6/29	4,441	250	796	14	0	5,501
7/01	13,947	445	2,734	17	0	17,143
7/02	28,321	717	4,598	39	0	33,675
7/04	25,461	574	5,567	64	0	31,666
7/05	19,646	937	8,118	117	0	28,818
7/06	13,448	432	4,415	70	0	18,365
7/07	24,391	517	5,104	113	0	30,125
7/08	30,753	511	5,134	79	0	36,477
7/09	26,307	365	4,650	152	2	31,476
7/11	23,485	245	8,906	88	0	32,724
7/12	33,599	333	11,149	131	1	45,213
7/13	32,497	330	8,319	204	0	41,350
7/14	20,640	310	7,652	211	0	28,813
7/15	19,277	204	5,189	114	0	24,784
7/16	10,425	136	3,112	56	1	13,730
7/18	15,810	98	3,466	112	0	19,486
7/19	21,355	137	4,394	83	0	25,969
7/20	22,090	148	6,329	111	1	28,679
7/21	14,036	129	5,446	91	1	19,703
7/22	4,662	30	1,661	12	0	6,365
7/25	13,595	71	4,564	65	1	18,296
7/26	11,537	83	3,420	46	0	15,086
7/27	5,556	26	962	17	1	6,562
7/28	1,377	17	302	0	0	1,696
Total	**463,474**	**10,161**	**124,571**	**2,108**	**8**	**600,322**

[a] See Table 8 for inseason adjustments to the regular weekly fishing schedule.

[b] Information confidential, less than 4 permit holders involved in fishery.

Table 16.–Commercial salmon catch by date and species, in numbers of fish, Togiak Section, Bristol Bay, 2005.

	Deliveries							
Date	**Drift**	**Set**	**Sockeye**	**Chinook**	**Chum**	**Pink**	**Coho**	**Total**
6/08 [a]								
6/15 [a]								
6/16 [a]								
6/17 [a]								
6/20	14	8	1,167	271	109	0	0	1,547
6/21	15	16	1,112	357	246	0	0	1,715
6/22	17	19	1,723	346	608	1	0	2,678
6/23	7	5	808	195	170	1	0	1,174
6/27	32	54	4,310	960	1,737	15	0	7,022
6/28	53	71	5,807	583	2,770	31	0	9,191
6/29	7	22	1,313	194	408	8	0	1,923
7/01	47	67	13,947	445	2,734	17	0	17,143
7/02	86	122	28,321	717	4,598	39	0	33,675
7/04	45	87	17,191	485	3,823	40	0	21,539
7/05	78	83	14,797	898	7,244	101	0	23,040
7/06	72	98	13,448	432	4,415	70	0	18,365
7/07	74	117	24,391	517	5,104	113	0	30,125
7/08	82	126	30,753	511	5,134	79	0	36,477
7/09	58	104	26,307	365	4,650	152	2	31,476
7/11	59	117	23,485	245	8,906	88	0	32,724
7/12	98	132	31,825	329	10,694	131	1	42,980
7/13	88	141	24,940	317	7,415	192	0	32,864
7/14	71	133	20,640	310	7,652	211	0	28,813
7/15	70	116	19,277	204	5,189	114	0	24,784
7/16	31	74	10,425	136	3,112	56	1	13,730
7/18	64	46	13,087	80	2,866	89	0	16,122
7/19	72	75	17,397	112	3,841	74	0	21,424
7/20	77	90	16,609	130	5,498	91	1	22,329
7/21	40	81	10,472	117	5,008	73	1	15,671
7/22	11	31	4,662	30	1,661	12	0	6,365
7/25	62	69	13,088	69	4,257	64	1	17,479
7/26	83	85	11,348	81	3,412	45	0	14,886
7/27	42	62	5,556	26	962	17	1	6,562
7/28	10	15	1,377	17	302	0	0	1,696
Total	**1,567**	**2,271**	**409,700**	**9,529**	**114,531**	**1,924**	**8**	**535,692**

[a] Less than 4 permits, records are confidential.

Table 17.–Commercial salmon catch by date and species, in numbers of fish, Kulukak Section, Bristol Bay, 2005.

	Deliveries							
Date[a]	**Drift**	**Set**	**Sockeye**	**Chinook**	**Chum**	**Pink**	**Coho**	**Total**
6/20	1	5	175	24	97	0	0	296
6/21	1	12	920	48	318	2	0	1,288
6/22	0	7	562	34	82	1	0	679
6/27	15	35	4,604	143	1,246	37	0	6,030
6/28	21	39	5,513	105	1,195	14	0	6,827
6/29	11	22	3,128	56	388	6	0	3,578
7/04	17	50	8,270	89	1,744	24	0	10,127
7/05	9	29	4,849	39	874	16	0	5,778
7/12 [b]								
7/13	12	2	7,557	13	904	12	0	8,486
7/18	4	31	2,723	18	600	23	0	3,364
7/19	5	40	3,958	25	553	9	0	4,545
7/20	10	37	5,481	18	831	20	0	6,350
7/21	13	11	3,564	12	438	18	0	4,032
7/25	7	8	507	2	307	1	0	817
7/26	0	4	189	2	8	1	0	200
Total	**128**	**333**	**53,774**	**632**	**10,040**	**184**	**0**	**64,630**

[a] Kulukak Section is open 3 days per week by regulation. See Table 8 for inseason adjustments to the weekly fishing schedule.

[b] Less than 4 permits, records are confidential.

Table 18.–Commercial salmon catch by date and species, in numbers of fish, Matogak Section, Bristol Bay, 2005.

Date[a]	**Sockeye**	**Chinook**	**Chum**	**Pink**	**Coho**	**Total**
No Commercial Fishing Effort Occurred						
Total						

[a] Matogak Section is open 5 days per week by regulation. See Table 8 for inseason adjustments to the weekly fishing schedule.

Table 19.–Commercial salmon catch by date and species, in numbers of fish, Osviak Section, Bristol Bay, 2005.

Date[a]	**Sockeye**	**Chinook**	**Chum**	**Pink**	**Coho**	**Total**
No Commercial Fishing Effort Occurred						
Total						

[a] Osviak Section is open 5 days per week by regulation. See Table 8 for inseason adjustments to the weekly fishing schedule.

Table 20.–Commercial salmon catch by district and species, in number of fish, Bristol Bay, 2005.

District and River System		Sockeye	Chinook	Chum	Pink	Coho	Total
NAKNEK-KVICHAK DISTRICT							
Kvichak River		557,186					
Branch River		1,081,990					
Naknek River		5,061,410					
	Total	6,700,586	1,294	197,479	32	3,308	6,902,699
EGEGIK DISTRICT		8,004,125	498	63,164	0	20,165	8,087,952
UGASHIK DISTRICT		2,202,202	1,762	40,315	1	8,162	2,252,442
NUSHAGAK DISTRICT							
Wood River		3,274,117					
Igushik River		1,512,321					
Nushagak River		2,345,904					
	Total	7,132,342	61,854	874,090	554	43,189	8,112,029
TOGIAK DISTRICT							
Togiak Section		409,700	9,829	114,531	1,924	8	535,992
Kulukak Section		53,774	632	10,040	184	0	64,630
Matogak Section		0	0	0	0	0	0
Osviak Section		0	0	0	0	0	0
	Total	463,474	10,461	124,571	2,108	8	600,622
TOTAL BRISTOL BAY		**24,502,729**	**75,869**	**1,299,619**	**2,695**	**74,832**	**25,955,744**

Note: Species other than sockeye are not apportioned to individual rivers.

Table 21.–Daily sockeye salmon escapement tower counts by river system, eastside Bristol Bay, 2005.

	Kvichak River		Naknek River		Alagnak River		Egegik River		Ugashik River	
Date	**Daily**	**Cum.**	**Daily**	**Cum.**	**Daily**	**Cum.**	**Daily**	**Cum.**	**Daily**	**Cum.**
6/17							6,348	6,348		
6/18			4,938	4,938			6,540	12,888		
6/19			12,912	17,850			3,930	16,818		
6/20	144	144	13,302	31,152			2,562	19,380		
6/21	126	270	1,488	32,640			36,468	55,848		
6/22	402	672	660	33,300			27,156	83,004		
6/23	426	1,098	390	33,690			5,850	88,854		
6/24	336	1,434	48	33,738			4,188	93,042		
6/25	420	1,854	54,504	88,242	12	12	870	93,912		
6/26	204	2,058	106,602	194,844	1,476	1,488	9,324	103,236		
6/27	1,938	3,996	13,512	208,356	16,650	18,138	39,246	142,482		
6/28	22,410	26,406	46,110	254,466	2,730	20,868	166,536	309,018		
6/29	4,242	30,648	120,030	374,496	13,008	33,876	163,506	472,524		
6/30	32,310	62,958	140,196	514,692	107,658	141,534	103,956	576,480	60	60
7/01	131,670	194,628	289,674	804,366	178,794	320,328	137,292	713,772	2,118	2,178
7/02	191,190	385,818	110,940	915,306	307,800	628,128	139,944	853,716	6,318	8,496
7/03	206,346	592,164	180,846	1,096,152	235,182	863,310	176,892	1,030,608	46,746	55,242
7/04	172,584	764,748	175,098	1,271,250	207,096	1,070,406	154,290	1,184,898	65,040	120,282
7/05	123,630	888,378	135,900	1,407,150	138,036	1,208,442	107,676	1,292,574	27,630	147,912
7/06	98,496	986,874	172,860	1,580,010	304,614	1,513,056	103,854	1,396,428	20,430	168,342
7/07	165,186	1,152,060	188,160	1,768,170	430,794	1,943,850	58,878	1,455,306	10,368	178,710
7/08	234,966	1,387,026	103,914	1,872,084	264,546	2,208,396	34,512	1,489,818	14,424	193,134
7/09	189,984	1,577,010	109,344	1,981,428	229,176	2,437,572	25,158	1,514,976	89,484	282,618
7/10	130,872	1,707,882	188,364	2,169,792	252,672	2,690,244	23,514	1,538,490	133,350	415,968

-continued-

Table 21.–Page 2 of 2.

	Kvichak River		Naknek River		Alagnak River		Egegik River		Ugashik River	
Date	**Daily**	**Cum.**	**Daily**	**Cum.**	**Daily**	**Cum.**	**Daily**	**Cum.**	**Daily**	**Cum.**
7/11	177,822	1,885,704	136,518	2,306,310	438,390	3,128,634	23,688	1,562,178	56,316	472,284
7/12	150,690	2,036,394	81,090	2,387,400	387,714	3,516,348	18,528	1,580,706	80,796	553,080
7/13	100,140	2,136,534	35,250	2,422,650	196,074	3,712,422	14,556	1,595,262	50,004	603,084
7/14	51,498	2,188,032	77,310	2,499,960	56,586	3,769,008	16,758	1,612,020	34,746	637,830
7/15	24,750	2,212,782	59,142	2,559,102	62,220	3,831,228	9,564	1,621,584	25,026	662,856
7/16	24,558	2,237,340	55,416	2,614,518	65,160	3,896,388			17,424	680,280
7/17	17,760	2,255,100	43,242	2,657,760	88,506	3,984,894			9,942	690,222
7/18	21,006	2,276,106	45,012	2,702,772	61,998	4,046,892			7,902	698,124
7/19	15,120	2,291,226	28,296	2,731,068	85,434	4,132,326			12,870	710,994
7/20	17,808	2,309,034	10,020	2,741,088	44,328	4,176,654			14,526	725,520
7/21	9,096	2,318,130	3,534	2,744,622	21,828	4,198,482			15,876	741,396
7/22	2,292	2,320,422			20,544	4,219,026			13,032	754,428
7/23									6,198	760,626
7/24									8,094	768,720
7/25									5,040	773,760
7/26									5,412	779,172

Note: Blank cells represent days when no data was collected.

Table 22.–Daily sockeye salmon escapement tower counts by river system, westside Bristol Bay, 2005.

	Wood River		Igushik River		Nuyakuk River		Togiak River	
Date	Daily	Cum.	Daily	Cum.	Daily	Cum.	Daily	Cum.
6/19	29,742	29,742						
6/20	23,346	53,088						
6/21	27,822	80,910	3,270	3,270				
6/22	17,148	98,058	6,900	10,170				
6/23	62,928	160,986	3,732	13,902				
6/24	60,900	221,886	2,256	16,158	360	360		
6/25	16,614	238,500	6,240	22,398	636	996		
6/26	14,070	252,570	7,494	29,892	2,664	3,660		
6/27	8,862	261,432	2,064	31,956	4,458	8,118		
6/28	7,098	268,530	1,104	33,060	9,624	17,742		
6/29	23,268	291,798	1,062	34,122	10,608	28,350		
6/30	116,814	408,612	660	34,782	4,560	32,910		
7/01	328,086	736,698	9,072	43,854	2,130	35,040		
7/02	172,464	909,162	16,194	60,048	3,744	38,784	1,068	1,068
7/03	59,568	968,730	17,694	77,742	5,526	44,310	2,106	3,174
7/04	28,254	996,984	21,570	99,312	22,014	66,324	3,318	6,492
7/05	28,158	1,025,142	26,988	126,300	37,824	104,148	3,486	9,978
7/06	37,098	1,062,240	35,256	161,556	34,776	138,924	3,540	13,518
7/07	61,212	1,123,452	36,690	198,246	19,146	158,070	6,222	19,740
7/08	88,494	1,211,946	32,940	231,186	11,850	169,920	3,840	23,580
7/09	71,346	1,283,292	19,458	250,644	11,268	181,188	2,094	25,674
7/10	66,396	1,349,688	17,628	268,272	10,368	191,556	906	26,580
7/11	43,752	1,393,440	15,366	283,638	11,166	202,722	774	27,354
7/12	32,172	1,425,612	16,818	300,456	5,094	207,816	2,250	29,604
7/13	21,546	1,447,158	14,868	315,324	4,218	212,034	4,578	34,182
7/14	12,972	1,460,130	12,072	327,396	7,974	220,008	5,748	39,930
7/15	9,288	1,469,418	7,854	335,250	10,476	230,484	8,040	47,970
7/16	8,244	1,477,662	7,362	342,612	4,446	234,930	5,376	53,346
7/17	8,046	1,485,708	5,928	348,540	2,934	237,864	3,168	56,514
7/18	10,842	1,496,550	5,412	353,952	4,374	242,238	1,518	58,032
7/19			5,028	358,980	2,100	244,338	1,386	59,418
7/20			5,181	364,161	1,716	246,054	4,176	63,594
7/21			1,548 [a]	365,709	1,578	247,632	8,472	72,066
7/22					2,154	249,786	4,392	76,458
7/23					948	250,734	2,226	78,684
7/24					282 [a]	251,016	2,478	81,162
7/25							1,578	82,740
7/26							4,590	87,330
7/27							8,244	95,574
7/28							9,966	105,540
7/29							5,778	111,318
7/30							5,112	116,430

-continued-

Table 22.–Page 2 of 2.

	Wood River		Igushik River		Nuyakuk River		Togiak River	
Date	**Daily**	**Cum.**	**Daily**	**Cum.**	**Daily**	**Cum.**	**Daily**	**Cum.**
7/31							3,996	120,426
8/01							5,508	125,934
8/02							5,394	131,328
8/03							5,028	136,356
8/04							6,294	142,650
8/05							3,108	145,758
8/06							1,998	147,756
8/07							1,422 [a]	149,178

Note: Blank cells represent days when no data was collected.

[a] Denotes a partial count.

Table 23.–Final daily and cumulative escapement estimates by species, Nushagak River sonar project, Bristol Bay, 2005.

	Sockeye		Chinook		Chum		Pink		Coho		Total	
Date	Daily	Cum.	Daily	Cum.	Daily	Cum.	Daily	Cum.	Daily	Cum.	Daily	Cum.
6/08	299	299	3,401	3,401	299	299	0	0	0	0	3,999	3,999
6/09	525	824	1,972	5,373	525	824	0	0	0	0	3,023	7,022
6/10	175	999	1,644	7,017	87	912	0	0	0	0	1,906	8,928
6/11	196	1,195	1,361	8,378	196	1,108	0	0	0	0	1,754	10,682
6/12	173	1,369	1,052	9,430	520	1,628	0	0	0	0	1,746	12,427
6/13	192	1,561	1,434	10,865	461	2,089	0	0	0	0	2,087	14,514
6/14	497	2,058	1,204	12,069	184	2,273	0	0	0	0	1,885	16,400
6/15	455	2,513	3,492	15,561	766	3,039	0	0	0	0	4,713	21,112
6/16	1,854	4,367	1,378	16,939	3,488	6,527	0	0	0	0	6,720	27,833
6/17	1,516	5,884	693	17,632	249	6,775	0	0	0	0	2,458	30,291
6/18	5,695	11,579	14,426	32,058	20,217	26,993	0	0	0	0	40,338	70,629
6/19	24,378	35,957	38,377	70,435	63,278	90,271	0	0	0	0	126,033	196,663
6/20	39,826	75,783	13,701	84,136	24,312	114,583	0	0	0	0	77,840	274,502
6/21	29,058	104,841	7,507	91,643	14,999	129,583	0	0	0	0	51,564	326,067
6/22	33,547	138,388	9,538	101,181	27,839	157,421	0	0	0	0	70,924	396,991
6/23	24,241	162,629	9,260	110,441	32,956	190,377	0	0	0	0	66,457	463,448
6/24	47,546	210,175	7,398	117,839	22,739	213,116	0	0	0	0	77,682	541,130
6/25	58,180	268,355	4,670	122,509	18,604	231,720	0	0	0	0	81,454	622,584
6/26	29,199	297,554	3,733	126,242	17,908	249,629	0	0	0	0	50,840	673,424
6/27	19,874	317,427	2,645	128,887	13,770	263,399	0	0	0	0	36,288	709,712
6/28	10,742	328,169	2,247	131,134	12,414	275,813	0	0	0	0	25,403	735,116
6/29	8,234	336,403	3,791	134,925	6,097	281,911	0	0	0	0	18,123	753,239
6/30	15,585	351,989	3,646	138,570	4,220	286,130	0	0	0	0	23,450	776,689
7/01	149,616	501,604	5,593	144,164	32,215	318,346	0	0	0	0	187,425	964,114
7/02	198,824	700,428	4,347	148,510	11,774	330,120	0	0	0	0	214,944	1,179,058
7/03	91,069	791,497	3,512	152,022	14,753	344,873	0	0	0	0	109,334	1,288,392
7/04	30,796	822,292	2,289	154,311	13,059	357,933	0	0	0	0	46,144	1,334,536
7/05	16,861	839,153	1,886	156,197	8,703	366,635	0	0	0	0	27,450	1,361,985

-continued-

Table 23.–Page 2 of 2.

	Sockeye		Chinook		Chum		Pink		Coho		Total	
Date	**Daily**	**Cum.**	**Daily**	**Cum.**	**Daily**	**Cum.**	**Daily**	**Cum.**	**Daily**	**Cum.**	**Daily**	**Cum.**
7/06	13,258	852,411	2,993	159,190	6,440	373,075	0	0	0	0	22,690	1,384,676
7/07	23,836	876,248	2,334	161,524	6,315	379,389	0	0	0	0	32,485	1,417,161
7/08	36,195	912,443	756	162,280	10,705	390,095	0	0	0	0	47,657	1,464,818
7/09	35,971	948,413	167	162,447	4,508	394,603	0	0	0	0	40,645	1,505,463
7/10	20,953	969,367	824	163,271	11,802	406,405	0	0	0	0	33,579	1,539,043
7/11	20,555	989,922	3,980	167,251	19,590	425,994	0	0	0	0	44,125	1,583,167
7/12	16,283	1,006,204	1,405	168,657	7,510	433,504	0	0	0	0	25,198	1,608,365
7/13	13,345	1,019,549	1,424	170,081	7,089	440,593	0	0	0	0	21,858	1,630,223
7/14	8,019	1,027,568	628	170,708	947	441,539	0	0	0	0	9,593	1,639,815
7/15	5,900	1,033,468	638	171,346	921	442,460	0	0	0	0	7,459	1,647,274
7/16	3,009	1,036,477	253	171,600	2,359	444,819	0	0	0	0	5,622	1,652,896
7/17	2,883	1,039,360	308	171,907	3,240	448,059	0	0	0	0	6,431	1,659,327

Table 24.–Comparison of daily sockeye salmon escapement estimates by tower count, aerial survey and river test fishing enumeration methods, Kvichak River, Bristol Bay, 2005.

	Tower Count		Aerial Survey	River Test Fishing				
				Fish per	Index Points		Cumulative	Estimated
Date	Daily	Cum.	Total	Index Pt.[a]	Daily	Cum.	Escapement	River Fish[b]
6/20	144	144						
6/21	126	270		41	6	6	246	
6/22	402	672		41	0	6	246	
6/23	426	1,098		41	0	6	246	
6/24	336	1,434		41	0	6	246	
6/25	420	1,854		41	0	6	246	
6/26	204	2,058		41	11	17	697	
6/27	1,938	3,996		41	11	28	1,148	
6/28	22,410	26,406		41	96	124	5,084	50,000
6/29	4,242	30,648		30	2,749[c]	2,873	86,190	100,000
6/30	32,310	62,958		20	3,937[c]	6,810	136,200	200,000
7/01	131,670	194,628	279,887	25	4,753[c]	11,563	289,075	375,000
7/02	191,190	385,818		23	4,990[c]	16,553	380,719	350,000
7/03	206,346	592,164		21	7,316[c d]	23,869	501,249	300,000
7/04	172,584	764,748	347,307	17	9,168[c d]	33,037	561,629	200,000
7/05	123,630	888,378		25	8,956[d]	41,993	1,049,825	150,000
7/06	98,496	986,874		22	9,294[d]	51,287	1,128,314	100,000
7/07	165,186	1,152,060		22	5,938	57,225	1,258,950	130,000
7/08	234,966	1,387,026		38	3,629	60,854	2,312,452	250,000
7/09	189,894	1,576,920	335,231	37	3,574	64,428	2,383,836	170,000
7/10	130,872	1,707,792		37	2,945	67,373	2,492,801	150,000
7/11	177,822	1,885,614		39	3,165	70,538	2,750,982	225,000
7/12	150,690	2,036,304		39	3,119	73,657	2,872,623	150,000
7/13	100,140	2,136,444		38	1,449	75,106	2,854,028	90,000
7/14	51,498	2,187,942		38	731	75,837	2,881,806	40,000
7/15	24,750	2,212,692		38	557	76,394	2,902,972	20,000
7/16	24,558	2,237,250						
7/17	17,760	2,255,010						
7/18	21,006	2,276,016						
7/19	15,120	2,291,136						
7/20	17,808	2,308,944						
7/21	9,096	2,318,040						
7/22	2,292	2,320,332						

Note: Blank cells represent days when no data was collected.

[a] The mean fish per index (FPI) of 41, based on median FPI's from the last 5 years, was used through June 28. Thereafter, FPI's were based on lag-time relationships.

[b] Estimated river fish (ERF) was based on the river test fish cumulative escapement estimate less the cumulative tower count. On occasion, staff adjusted the ERF based on aerial surveys, catchability, etc.

[c] Indexes for June 29 - July 4 were calculated incorrectly inseason. The corrected indexes are presented here but the ERF estimates are still based on the inseason indexes.

[d] The daily indexes for July 3–July 6 was reduced by 50% to estimate ERF's for July 8 and the remainder of the season.

Table 25.–Comparison of daily sockeye salmon escapement estimates by tower count, aerial survey and river test fishing enumeration methods, Egegik River, Bristol Bay, 2005.

	Tower Count		Aerial Survey	River Test Fishing				
				Fish per	Index Points		Cumulative	Estimated
Date	Daily	Cum.	Total	Index Pt.[a]	Daily	Cum.	Escapement	River Fish[b]
6/14			7,115	64	34	34	2,194	
6/15				64	136	171	10,927	10,000
6/16				64	210	381	24,366	24,000
6/17	6,348	6,348		64	75	456	29,168	24,000
6/18	6,540	12,888		55	276	731	40,224	27,000
6/19	3,930	16,818		50	45	777	38,839	22,000
6/20	2,562	19,380		34	432	1,209	41,089	22,000
6/21	36,468	55,848	21,800	59	278	1,487	87,713	30,000
6/22	27,156	83,004		59	100	1,587	93,617	10,000
6/23	5,850	88,854		57	22	1,609	91,722	2,000
6/24	4,188	93,042		57	91	1,701	96,931	4,000
6/25	870	93,912	100	56	170	1,871	104,749	10,000
6/26	9,324	103,236		56	558	2,429	136,024	35,000
6/27	39,246	142,482		59	1,364	3,793	223,771	80,000
6/28	166,536	309,018	75,400	80	1,617	5,410	432,760	100,000
6/29	163,506	472,524		83	1,724	7,134	592,114	120,000
6/30	103,956	576,480		79	1,577	8,711	688,149	110,000
7/01	137,292	713,772		81	1,633	10,343	837,804	130,000
7/02	139,944	853,716		82	1,172	11,515	944,251	90,000
7/03	176,892	1,030,608	55,000	90	1,248	12,763	1,148,675	115,000
7/04	154,290	1,184,898		97	969	13,732	1,331,971	90,000
7/05	107,676	1,292,574		93	1,692	15,423	1,434,357	140,000
7/06	103,854	1,396,428		89	1,004	16,427	1,462,013	70,000
7/07	58,878	1,455,306	20,000	88	522	16,949	1,491,546	40,000
7/08	34,512	1,489,818		87	957	17,907	1,557,889	60,000
7/09	25,158	1,514,976		85	367	18,273	1,553,228	30,000
7/10	23,514	1,538,490		85	161	18,434	1,566,899	20,000
7/11	23,688	1,562,178		85	298	18,732	1,592,252	25,000
7/12	18,528	1,580,706						
7/13	14,556	1,595,262						
7/14	16,758	1,612,020						
7/15	9,564	1,621,584						

Note: Blank cells represent days when no data was collected.

[a] A 6-year mean fish per index (FPI) of 81, based on season ending FPI's of large inshore runs with a high 2 ocean age component, was used through June 19. Thereafter, FPI's were based on lag-time relationships.

[b] Estimated river fish (ERF) was based on the river test fish cumulative escapement estimate less the cumulative tower count. On occasion, staff adjusted the ERF based on aerial surveys, catchability, etc.

Table 26.–Comparison of daily sockeye salmon escapement estimates by tower count, aerial survey and river test fishing enumeration methods, Ugashik River, Bristol Bay, 2005.

				River Test Fishing				
	Tower Count		Aerial Survey	Fish per	Index Points		Cumulative	Estimated
Date	Daily	Cum.	Total	Index Pt.[a]	Daily	Cum.	Escapement	River Fish[b]
6/21			0					
6/24				34	64	64	2,166	
6/25			0	34	21	85	2,894	2,000
6/26				34	13	98	3,345	3,000
6/27				34	31	129	4,382	3,000
6/28				34	33	162	5,494	4,000
6/29				30	75	236	7,084	5,000
6/30	60	60		30	516	752	22,569	20,000
7/01	2,118	2,178		28	1,509	2,261	63,315	60,000
7/02	6,318	8,496		28	1,767	4,028	112,780	100,000
7/03	46,746	55,242	5,500	26	1,419	5,447	141,612	85,000
7/04	65,040	120,282		30	1,271	6,717	201,521	80,000
7/05	27,630	147,912		24	805	7,522	180,530	32,000
7/06	20,430	168,342		24	437	7,959	191,021	15,000
7/07	10,368	178,710	500	23	696	8,655	199,065	20,000
7/08	14,424	193,134		23	2,328	10,983	252,614	60,000
7/09	89,484	282,618		28	1,601	12,584	352,347	70,000
7/10	133,350	415,968		37	696	13,280	491,342	75,000
7/11	56,316	472,284	800	38	1,397	14,676	557,707	80,000
7/12	80,796	553,080		39	1,007	15,684	611,664	50,000
7/13	50,004	603,084		39	983	16,667	650,016	45,000
7/14	34,746	637,830		39	438	17,105	667,114	25,000
7/15	25,026	662,856		39	314	17,419	679,342	15,000
7/16	17,424	680,280		39	204	17,623	687,288	10,000
7/17	9,942	690,222		39	193	17,816	694,819	10,000
7/18	7,902	698,124		39	396	18,212	710,273	15,000
7/19	12,870	710,994		39	461	18,673	728,264	15,000
7/20	14,526	725,520						
7/21	15,876	741,396						
7/22	13,032	754,428						
7/23	6,198	760,626						
7/24	8,094	768,720						
7/25	5,040	773,760						
7/26	5,412	779,172						

Note: Blank cells represent days when no data was collected.

[a] A 2-year mean fish per index (FPI) of 65 was used through July 7. This value was based on season ending FPI's of recent year inshore runs (1999 and 2002) that contained a high 2 ocean age component. Thereafter, FPI's were based on lag-time relationships.

[b] Estimated river fish (ERF) was based on the river test fish cumulative escapement estimate less the cumulative tower count. On occasion, staff adjusted the ERF based on aerial surveys, catchability, etc.

Table 27.–Commercial salmon processors and buyers operating in Bristol Bay, 2005.

	Name of Operator/Buyer[a]	Base of Operations	District[b]	Method[c]	Export
1	Alaska General Seafoods	Kenmore, WA	K,E	C,EF,F	SEA, AIR
2	Alaska Wild Salmon	Dillingham, AK	N	F, EF	SEA, AIR
3	Aleutian Maid Processors, LLC [d]	Egegik, AK	E	F,EF,S	AIR
4	Anthony Wood	King Salmon, AK	K	C,S	SEA, AIR
5	Banacon Inc.[d]	Dillingham, AK	N	EF	AIR
6	Baywatch Seafoods, LLC	Woodinville, WA	K,E,U,N,T	EF,F	SEA, AIR
7	Big Creek Fisheries	Blaine, WA	E,N	F, EF	SEA, AIR
8	Blue Bird	Naknek, AK	K	EF	N/A
9	Bristol Bay Seafood Marketing Coop.	Naknek, AK	K	F	SEA
10	Coffee Point Seafoods of WA, LLC	S. Seattle, WA	E	F	SEA
11	Dancing Salmon Company, LLC	Dillingham, AK	N	F,S, EF	N/A
12	Ekuk Fisheries	Seattle, WA	N	EF	SEA
13	Favco Inc.	Anchorage, AK	N	EF	AIR
14	Friedman Family Fisheries, Inc.	Baltimore, MD	N	F	SEA
15	Great Ruby Fish Company	Anchorage, AK	K	EF,F	SEA, AIR
16	Icicle Seafoods, Inc.	Seattle, WA	K,E,U,N	C,F, EF	SEA, AIR
17	Iliamna Fish Company	Vancouver, WA	K	F, EF	SEA, AIR
18	Indian Valley Meats	Fairbanks, AK	N	EF,F	AIR
19	James Beasley	Colerain, NC	N	F	AIR
20	Joma Wild Seafoods	King Salmon, AK	K	F	N/A
21	Kim J. Hubert	Eagle River, AK	T	EF	N/A
22	Lady Marion Seafoods	Anchorage, AK	E	EF,F	AIR
23	Libby Bro. Wild Alaskan Harvest	Anchorage, AK	N	EF,F	AIR
24	Leader Creek Fisheries, LLC	Seattle, WA	K,E,U,N,T	EF,F	SEA
25	NorQuest Seafoods, Inc.	Seattle, WA	K,E,U,N	F	SEA
26	Ocean Beauty Seafoods, Inc.	Seattle, WA	K,E,U,N,T	C,EF,F	SEA, AIR
27	Pacman Fisheries/Bristol Gold, LLC	Naknek, AK	K	S,F	AIR
28	Paul Friis-Mikkelsen	Dillingham, AK	N	F	SEA
29	Pederson Point	Seattle, WA	K,E,U,N	F	SEA
30	Peter Pan Seafoods, Inc.	Seattle, WA	K,E,U,N	C,EF,F	SEA, AIR
31	Robert Lebovic	Asheville, NC	N	F	SEA
32	Simple Gifts	Duluth, MN	N	F	SEA
33	Snopac Products, Inc.	Seattle, WA	K,E,U,N	F	SEA
34	Sockeye Alaska	Anchorage, AK	N	EF	AIR
35	Togiak Fisheries	Seattle, WA	T	F	SEA
36	Trident Seafoods	Seattle, WA	K,E,U,N	C,F, EF	SEA, AIR
37	Ugashik Wild Salmon	Ugashik, AK	U	C,EF	AIR
38	Yard Arm Knot Fisheries, LLC	Seattle, WA	K,E,U,N	C,F	SEA

Canning=8; Freezing= 29; Fresh=23; Curing=4; Air Export=21; Sea Export=24

[a] Indicates operators with a processing facility in a district or operators from other areas buying fish and/or providing support service for fishers in districts away from the facility.

[b] K=Naknek-Kvichak; E=Egegik; U=Ugashik; N=Nushagak; T=Togiak.

[c] Type of processing: C=canned; EF=export fresh; F=frozen; S=cured.

[d] Registered but did not operate.

Table 28.–Mean round weight, price per pound, and total exvessel value of the commercial salmon catch, Bristol Bay, 2005.

Species	Total Catch (lbs.)	Mean Weight (lbs.)	Mean Price ($/lb.)	Exvessel Value ($)
Sockeye	155,212,960	6.33	0.60	93,268,564
Chinook	1,261,288	16.62	0.56	711,141
Chum	8,037,076	7.10	0.10	831,946
Pink	9,304	3.45	0.02	170
Coho	470,260	6.28	0.30	142,567
Total	**164,990,888**			**94,954,388**

Note: Weighted averages used.

Table 29.–Subsistence salmon harvest by species, in numbers of fish, by district and location fished, Bristol Bay, 2004.

Area and River System	Permits Issued [b]	Estimated Number of Salmon Harvested [a]					
		Sockeye	Chinook	Chum	Pink	Coho	Total
NAKNEK-KVICHAK DISTRICT	481	71,110	1,075	469	1,080	566	74,300
Naknek River	277	17,488	949	419	1,033	493	20,381
Kvichak River/Iliamna Lake:	206	53,225	99	10	43	39	53,416
Alagnak (Branch) River	2	91	0	3	0	0	94
Igiugig	2	773	2	0	0	0	775
Iliamna (community)	3	43	0	0	0	0	43
Iliamna Lake	41	10,060	0	0	0	0	10,060
Kijik	2	135	0	0	0	0	135
Kokhanok	24	11,533	16	6	43	12	11,610
Kvichak River	10	650	0	0	0	0	650
Lake Clark: General	26	2,917	0	0	0	0	2,917
Levelock	3	1,000	81	1	0	27	1,108
Newhalen River	37	12,062	0	0	0	0	12,062
Nondalton Village	14	2,910	0	0	0	0	2,910
Pedro Bay	23	4,712	0	0	0	0	4,712
Pile Bay	1	183	0	0	0	0	183
Port Alsworth	9	733	0	0	0	0	733
Six Mile Lake	27	5,424	0	0	0	0	5,424
Naknek-Kvichak Unspecified	6	397	27	40	4	35	503
EGEGIK DISTRICT	46	2,618	169	410	91	1,423	4,711
UGASHIK DISTRICT	21	804	64	9	4	234	1,116
NUSHAGAK DISTRICT	511	17,491	15,610	3,869	1,944	4,240	43,154
Wood River	120	4,094	2,449	562	148	648	7,901
Lower Nushagak River	32	692	1,418	213	123	291	2,738
Upper Nushagak River	87	2,938	4,423	1,793	398	865	10,416
Dillingham Beaches	236	6,875	6,413	1,173	1,087	1,815	17,363
Nushagak Bay Commercial	45	913	440	65	174	323	1,915
Igushik/Snake River	27	1,919	314	41	12	266	2,552
Nushagak, Site Unspecified	3	60	153	23	2	32	270
TOGIAK DISTRICT	46	1,795	1,094	383	108	204	3,584
TOTAL BRISTOL BAY	**1,100**	**93,819**	**18,012**	**5,141**	**3,225**	**6,667**	**126,865**

Note: 2005 numbers were not available at the time of publication.

[a] Harvests are extrapolated for all permits issued, based on those returned and on the area fished as recorded on the permit. Due to rounding, the sum of columns and rows may not equal the estimated total. Of 1,100 permits issued for the management area, 940 were returned (85.5%).

[b] Sum of sites may exceed district totals, and sum of districts may exceed area total, because permittees may use more than one site.

Table 30.–Daily observed estimates (tons) of herring by index area, Togiak District, 2005.

Date	Start Time	Survey Rating[b]	Miles of Spawn	Estimated Biomass by Index Area[a]													Daily Total
				NUS	KUK	MET	NVK	UGL	TOG	TNG	MTG	OSK	PYR	CPN	HAG	WAL	
4/15	09:45	1.2															
4/18	09:45	2.1															
4/20	10:05	3.9															
4/22	13:25	4.0															
4/24	09:40	3.3															
4/25	11:30	3.1															
4/26	08:05	3.2															
4/28	13:40	3.5		1,874	3,080		640	2,365	3,028		360				49	418	11,814
4/29	08:00	3.9	3.8			950	570	950	1,888								4,358
5/01	13:45	3.3	4.5	12,008	1,015	418	1,996	1,892	3,604	1,041	888	30	261		1,347		24,500
5/01	19:00	2.0	8.0		12,588	8,720	7,699	3,850	14,301	3,490	17,335	4,071	12,357	560	17,773	5,841	108,585
5/02	17:15	2.8	5.1	27	3,928	1,023	233	853	56,393	529	1,859	575	2,112			1,217	68,749
5/03[c]	17:45		3.3														0
5/04[c]	11:00		2.0														0
5/11	13:15	2.2	0.7	2,285	546	1,528	2,057	155	4,217	748	1,706	954			2,934		17,130
5/16	13:50	3.4	0.2	633	1,196	2,024	1,354	334	39,386	148	169	216			249		45,709
5/26	14:00	4.6				1,974	429	30									2,433
Total linear miles of spawn			**27.6**										**Peak biomass estimate[d]**				**108,585**

Note: Blank cells represent nothing observed.

[a] Index areas: NUS - Nushagak Peninsula; KUK - Kulukak; MET - Metervik; NUK - Nunavachak; UGL - Ungalikthluk/Togiak; TOG - Togiak; TNG - Tongue Pt; MTG - Matogak; HAG - Hagemeister; OSK - Osvisak; PYT - Pyrite Point; CPN - Cape Newenham.

[b] Average survey rating for all sections surveyed: 1= Excellent, 2 = Good, 3 = Fair, 4 = Poor, 5 = Unsatisfactory.

[c] Vessel count and spawn survey only.

[d] The 2005 Togiak District Pacific herring total run biomass could not be estimated from aerial survey information because of poor survey conditions.

Table 31.–Emergency order (EO) commercial fishing periods for herring sac roe and spawn-on-kelp, Togiak District, 2005.

EO #	Area[a]		Date and Time			Duration
Herring Sac Roe Gillnet						
DLG-02	Egg Island Section		4/30	11:00 a.m. to 4/30	8:00 p.m.	9 hrs.
DLG-03	Egg Island Section	extension	4/30	8:00 p.m. to 5/01	10:00 a.m.	14 hrs.
DLG-05	Egg Island Section	extension	5/01	10:00 a.m. to 5/01	11:00 p.m.	13 hrs.
DLG-07	Mid Nunavachak Bay to Right Hand Pt. and Egg Island Section		5/02	5:00 a.m. to 5/02	12:00 p.m.	7 hrs.
DLG-08	Mid Nunavachak Bay to Right Hand Pt. and Egg Island Section	extension	5/02	12:00 p.m. to 5/02	8:00 p.m.	8 hrs.
DLG-09	Mid Nunavachak Bay to Right Hand Pt. and Egg Island Section	extension	5/02	8:00 p.m. to 5/02	11:00 p.m.	3 hrs.
DLG-11	Egg Island Section		5/03	5:00 a.m. to 5/03	12:00 p.m.	7 hrs.
DLG-13	Egg Island Section	extension	5/03	12:00 p.m. to 5/03	6:00 p.m.	6 hrs.
DLG-14	Egg Island Section		5/04	4:00 a.m. to 5/04	2:00 p.m.	10 hrs.
DLG-16	Mid Nunavachak Bay to Right Hand Pt. and Egg Island Section	extension	5/04	2:00 p.m. to 5/04	8:00 p.m.	6 hrs.
DLG-18	Mid Nunavachak Bay to Right Hand Pt. and Egg Island Section	extension	5/04	8:00 p.m. to 5/05	10:00 a.m.	14 hrs.
DLG-19	Mid Nunavachak Bay to Right Hand Pt. and Egg Island Section	extension	5/05	10:00 a.m. to 5/05	8:00 p.m.	10 hrs.
DLG-22	Egg Island Section	extension	5/06	4:00 a.m. to 5/06	10:00 a.m.	6 hrs.
DLG-23	Mid Nunavachak Bay to Right Hand Pt. and Egg Island Section	extension	5/06	10:00 a.m. to 5/06	4:00 p.m.	6 hrs.
DLG-25	East Ungalikthluk Bay to Right Hand Pt. and Egg Island Section	extension	5/06	4:00 p.m. to 5/06	10:00 p.m.	6 hrs.
DLG-26	East Ungalikthluk Bay to Right Hand Pt. and Egg Island Section		5/07	6:00 a.m. to 5/07	10:00 p.m.	16 hrs.
DLG-27	East Ungalikthluk Bay to Right Hand Pt. and Egg Island Section		5/08	6:00 a.m. to 5/08	2:00 p.m.	8 hrs.
Herring Sac Roe Purse Seine						
DLG-01	Right Hand Pt. to Anchor Pt., Togiak Reef to Cape Newenham		4/30	10:00 a.m. to 4/30	10:00 p.m.	12 hrs.
DLG-04	Right Hand Pt. to Anchor Pt., Togiak Reef to Cape Newenham		5/01	10:00 a.m. to 5/01	10:00 p.m.	12 hrs.
DLG-06	Mid-Nunavachak Bay to Anchor Pt., Togiak Reef to Cape Newenham		5/02	7:00 a.m. to 5/02	7:00 p.m.	12 hrs.
DLG-10	Mid-Nunavachak Bay to Anchor Pt., Togiak Reef to Cape Newenham	extension	5/02	7:00 p.m. to 5/02	11:00 p.m.	4 hrs.
DLG-12	Right Hand Pt. to Anchor Pt., Togiak Reef to Cape Newenham		5/03	7:00 a.m. to 5/03	11:00 p.m.	16 hrs.
DLG-15	Mid-Nunavachak Bay to Anchor Pt., Togiak Reef to Cape Newenham		5/04	10:00 a.m. to 5/04	2:00 p.m.	4 hrs.
DLG-17	Mid-Nunavachak Bay to Anchor Pt., Togiak Reef to Cape Newenham	extension	5/04	2:00 p.m. to 5/04	10:00 p.m.	8 hrs.
DLG-20	Mid-Nunavachak Bay to Anchor Pt., Togiak Reef to Cape Newenham		5/05	10:00 a.m. to 5/05	8:00 p.m.	10 hrs.
DLG-21	Right Hand Pt. to Anchor Pt., Togiak Reef to Cape Newenham	extension	5/05	8:00 p.m. to 5/05	11:00 p.m.	3 hrs.
DLG-24	Tongue Pt. to Oosik Spit		5/06	11:00 a.m. to 5/06	1:00 p.m.	2 hrs.
Herring Spawn on Kelp[b]						

[a] Area descriptions are approximate. Precise boundaries are described in Emergency Orders.

[b] There was no market for spawn on kelp therefore, a fishery did not occur.

Table 32.–Commercial herring harvest (tons) by fishing section, gear type, and date Togiak District, Bristol Bay, 2005.

Date	Duration	Periods	Kulukak Tons	Kulukak Roe %	Nunavachak Tons	Nunavachak Roe %	Togiak Tons	Togiak Roe %	Hagemeister Tons	Hagemeister Roe %	Pyrite Point Tons	Pyrite Point Roe %	Cape Newenham Tons	Cape Newenham Roe %	Total Tons	Total Roe %
Purse Seine																
29-Apr			0.0	0.0	202.6	9.3 [a]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	203	9.3
30-Apr	12:00	1			4023.6	9.3	0.0	0.0	1,322.6	9.0	0.0	0.0	0.0	0.0	5,346	9.2
1-May	12:00	2			469.6	9.8	0.0	0.0	123.1	9.4	0.0	0.0	0.0	0.0	593	9.7
2-May	16:00	3			728.1	9.1	0.0	0.0	789.6	12.9 [c]	923.8	9.5	112.3	9.2	2,554	9.8
3-May	16:00	4			390.0	10.4 [b]	0.0	0.0	440.6	9.9	932.1	9.0	176.8	8.3	1,940	9.3
4-May	12:00	5			856.6	10.6	0.0	0.0	1,403.2	9.5	459.9	10.0	0.0	0.0	2,720	9.9
5-May	13:00	6			0.0	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6-May	2:00	7					0.0	0.0	1,618.0	9.3 [a]	98.3	11 [a]	0.0	0.0	1,716	9.4
Subtotal	83:00:00				6,670.5	9.5 [a, b]	0.0	0.0	5,697.1	9.5 [a,c]	2414.1	9.5 [a]	289.1	8.6	15,071	9.5
Gillnet																
30-Apr	13:00	1	1460.9	11.3											1,461	11.3
1-May	23:00	2	1181.6	11.0											1,182	11.0
2-May	18:00	3	900.6	10.8	0.0	0.0									901	10.8
3-May	13:00	4	750.1	10.8											750	10.8
4-May	20:00	5	632.9	10.8	0.0	0.0									633	10.8
5-May	20:00	6	53.2	11.0	0.0	0.0									53	11.0
6-May	18:00	7	32.3	13.0	0.0	0.0									32	13.0
7-May	16:00	8	605.8	12.2	13.6	12.0									619	12.2
8-May	8:00	9	210.0	11.5	0.0	0.0									210	11.5
Subtotal	149:00:00		5,827.4	11.2	13.6	12.0									5,841	11.2
Combined																
29-Apr					202.6	9.3 [a]									203	9.3
30-Apr			1,460.9	11.3	4,023.6	9.3	0.0	0.0	1,322.6	9.0	0.0	0.0	0.0	0.0	6,807	9.7
1-May			1,181.6	11.0	469.6	9.8	0.0	0.0	123.1	9.4	0.0	0.0	0.0	0.0	1,774	10.6
2-May			900.6	10.8	728.1	9.1	0.0	0.0	789.6	12.9 [c]	923.8	9.5	112.3	9.2	3,454	10.1
3-May			750.1	10.8	390.0	10.4 [b]	0.0	0.0	440.6	9.9	932.1	9.0	176.8	8.3	2,690	9.7
4-May			632.9	10.8	856.6	10.6	0.0	0.0	1,403.2	9.5	459.9	10.0	0.0	0.0	3,353	10.1

-continued-

Table 32.–Page 2 of 2.

Date	Duration Periods	Kulukak Tons	Kulukak Roe %	Nunavachak Tons	Nunavachak Roe %	Togiak Tons	Togiak Roe %	Hagemeister Tons	Hagemeister Roe %	Pyrite Point Tons	Pyrite Point Roe %	Cape Newenham Tons	Cape Newenham Roe %	Total Tons	Total Roe %
5-May		53.2	11.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	53	11.0
6-May		32.3	13.0	0.0	0.0	0.0	0.0	1,618.0	9.3 [a]	98.3	11.0 [a]	0.0	0.0	1,749	9.5
7-May		605.8	12.2	13.6	12.0									619	12.2
8-May		210.0	11.5	0.0	0.0									210	11.5
Total		**5,827.4**	**11.2**	**6,684.1**	**9.5** [a, b]	**0.0**	**0.0**	**5,697.1**	**9.5** [a,c]	**2414.1**	**9.5** [a]	**289.1**	**8.6**	**20,912**	**10.0**

Note: Blank cells represent no data because of area closures.

[a] Includes test fish harvest which is conducted during closed commercial periods.

[b] Includes 250 tons documented waste.

[c] Includes 534.1 tons documented waste.

Table 33.–Herring total run and commercial catch by year class, Togiak District, 2005.

Year		Total Run		Harvest[a]		Escapement	
Class	Age	(tons)	%	(tons)	%	(tons)	%
1985	20	0	0.0%	0	0%	0	0.0%
1986	19	0	0.0%	0	0%	0	0.0%
1987	18	0	0.0%	5	0%	0	0.0%
1988	17	299	0.2%	34	0%	265	0.2%
1989	16	1,714	1.1%	119	1%	1,580	1.2%
1990	15	2,703	1.7%	211	2%	2,419	1.8%
1991	14	2,742	1.7%	249	3%	2,429	1.8%
1992	13	3,171	2.0%	351	3%	2,678	2.0%
1993	12	9,099	5.8%	912	6%	7,922	5.8%
1994	11	10,989	7.0%	958	9%	9,599	7.1%
1995	10	11,104	7.1%	1,002	7%	9,583	7.0%
1996	9	32,891	21.0%	2,894	4%	28,092	20.7%
1997	8	62,532	39.9%	5,932	24%	54,547	40.1%
1998	7	17,518	11.2%	1,980	37%	15,172	11.2%
1999	6	1,286	0.8%	165	3%	1,111	0.8%
2000	5	538	0.3%	42	0%	495	0.4%
2001	4	141	0.1%	13	0%	128	0.1%
2002	3	0	0.0%	0	0%	0	0.0%
2003	2	0	0.0%	0	0%	0	0.0%
Total		**156,727**	**100.0%**	**14,868**	**100.0%**	**136,023**	**100.0%**

[a] Does not include harvest in the Dutch Harbor food and bait fishery, but does include harvest from test fishery.

Table 34.–Commercial herring sac roe and spawn-on-kelp buyers in Togiak District, 2005.

			Product Purchased		
			Sac Roe		
	Operator/Buyer[a]	Base of Operation	Gillnet	Purse Seine	Spawn-on-Kelp
1	Leader Creek Fisheries	S/P Naknek	X	X	
2	Trident Seafoods	S/P Naknek, P/V Alaska Packer	X	X	
3	Icicle Seafoods	P/Vs Arctic Star, Bering Star, Discovery Star	X	X	
4	Y.A.K. Inc.	S/P Red Salmon Cannery	X	X	
5	Norquest Seafoods, Inc.	P/V Aleutian Falcon/Pribilof	X	X	
6	Snopac Products Inc.	P/V Snopac Innovator	X	X	
7	Peter Pan Seafoods, Inc.	P/V Steller Sea	X	X	
8	Togiak Fisheries	S/P Pedersen Pt., S/P Togiak Fish - Togiak		X	

[a] Operators that registered in the Togiak District.

APPENDIX A. SALMON

Appendix A1.–Escapement goals and actual counts of sockeye salmon by river system, in thousands of fish, Bristol Bay, 1985–2005.

	Kvichak River			Naknek River[a]		
	Range			Range		
Year	Lower	Upper	Actual	Lower	Upper	Actual
1985	8,000	12,000	7,211	800	1,400	1,850
1986	4,000	6,000	1,179	800	1,400	1,978
1987	4,000	6,000	6,066	800	1,400	1,062
1988	4,000	6,000	4,065	800	1,400	1,038
1989	6,000	10,000	8,318	800	1,400	1,612
1990	6,000	10,000	6,970	800	1,400	2,093
1991	4,000	8,000	4,223	800	1,400	3,579
1992	4,000	8,000	4,726	800	1,400	1,607
1993	4,000	8,000	4,025	800	1,400	1,536
1994	6,000	10,000	8,338	800	1,400	991
1995	6,000	10,000	10,039	800	1,400	1,111
1996	4,000	6,000	1,451			1,078
1997	4,000	6,000	1,504	800	1,400	1,026
1998	2,000	10,000	2,296	800	1,400	1,202
1999	6,000	10,000	6,197	800	1,400	1,625
2000	6,000	10,000	1,828	800	1,400	1,375
2001	2,000	10,000	1,095	800	2,000	1,830
2002	2,000	10,000	704	800	2,000	1,264
2003	2,000	10,000	1,687	800	2,000	1,831
2004	2,000	10,000	5,500	800	2,000	1,939
20-Year Average	4,300	8,800	4,371	800	1,526	1,581
1985-94 Average	5,000	8,400	5,512	800	1,400	1,735
1995-04 Average	3,600	9,200	3,230	800	1,667	1,428
2005	2,000	10,000	2320	800	2,000	2745

	Egegik River			Ugashik River		
	Range			Range		
Year	Lower	Upper	Actual	Lower	Upper	Actual
1985	800	1,200	1,095	500	900	998
1986	800	1,200	1,151	500	900	1,001
1987	800	1,200	1,273	500	900	669
1988	800	1,200	1,599	500	900	643
1989	800	1,200	1,610	500	900	1,681
1990	800	1,200	2,191	500	900	730
1991	800	1,200	2,787	500	900	2,457
1992	800	1,200	1,945	500	900	2,174
1993	800	1,200	1,517	500	900	1,390
1994	800	1,200	1,897	500	900	1,081
1995	800	1,400	1,282	500	1,200	1,304
1996	800	1,400	1,076	500	1,200	668
1997	800	1,400	1,104	500	1,200	618
1998	800	1,400	1,111	500	1,200	891
1999	800	1,400	1,728	500	1,200	1,652
2000	800	1,400	1,032	500	1,200	620
2001	800	1,400	969	500	1,200	834
2002	800	1,400	1,036	500	1,200	892
2003	800	1400	1,152	500	1,200	759
2004	800	1,400	1,290	500	1,200	776
20-Year Average	800	1,300	1,442	500	1,050	1,092
1985-94 Average	800	1,200	1,707	500	900	1,282
1995-04 Average	800	1,400	1,178	500	1,200	901
2005	800	1,400	1,622	500	1,200	779

-continued-

Appendix A1.–Page 2 of 2.

	Wood River			Igushik River		
	Range			Range		
Year	Lower	Upper	Actual	Lower	Upper	Actual
1985	700	1,200	939	150	250	212
1986	700	1,200	819	150	250	309
1987	800	1,200	1,337	140	250	169
1988	800	1,200	867	140	250	170
1989	800	1,200	1,186	150	250	462
1990	700	1,200	1,069	150	250	366
1991	700	1,200	1,160	150	250	756
1992	700	1,200	1,286	150	250	305
1993	700	1,200	1,176	150	250	406
1994	700	1,200	1,472	150	250	446
1995	700	1,200	1,475	150	250	473
1996	700	1,200	1,650	150	250	401
1997	700	1,200	1,512	150	250	128
1998	700	1,200	1,756	150	250	216
1999	700	1,200	1,512	150	250	446
2000	700	1,200	1,300	150	250	413
2001	700	1,500	1,459	150	300	410
2002	700	1,500	1,284	150	300	123
2003	700	1,500	1,460	150	300	194
2004	700	1,500	1,543	150	300	110
20-Year Average	715	1,260	1,313	149	260	326
1985-94 Average	730	1,200	1,131	148	250	360
1995-04 Average	700	1,320	1,495	150	270	291
2005	700	1,500	1,497	150	300	366

	Nushagak River [b]			Togiak River		
	Range			Range		
Year	Lower [c]	Upper	Actual	Lower	Upper	Actual
1985	300	700	429	140	250	137
1986	300	700	822	140	250	168
1987	300	700	163	100	200	250
1988	300	700	483	100	200	277
1989	300	700	513	100	200	84
1990	340	760	680	140	250	142
1991	340	760	493	140	250	255
1992	340	760	695	140	250	199
1993	340	760	715	140	250	177
1994	340	760	509	140	250	155
1995	340	760	281	140	250	186
1996	340	760	504	140	250	157
1997	340	760	373	100	200	132
1998	340	760	459	100	200	154
1999	235	760	393	100	200	156
2000	340	760	404	100	200	312
2001	340	760	804	100	200	297
2002	340	760	316	100	200	162
2003	340	760	581	100	200	232
2004	340	760	492	100	200	129
20-Year Average	325	745	505	118	223	188
1985-94 Average	320	730	550	128	235	184
1995-04 Average	330	760	461	108	210	192
2005	340	760	1,096	100	200	149

[a] An optimal escapement goal of up to 2.0 million sockeye set by the BOF in 2001, when fishing in the Naknek River Special Harvest Area.

[b] Actual escapement through 1988 is Nuyakuk River tower count, from 1989–present is based on sonar count at Portage Creek.

[c] The "Optimal Escapement Goal" of 235,000 sockeye set by the BOF in 1999.

Appendix A2.–Salmon entry permit registration by gear and residency, Bristol Bay, 1985–2005.

	Drift Net[a]						Set Net[a]						Total
Year	Resident	Non-Resident	Drift Total	Permits Fished	% Fished	Interim Use	Resident	Non-Resident	Set Total	Permits Fished	% Fished	Interim Use	Drift Set
1985	1,062	772	1,834	1,815	99%	96	741	218	959	872	91%	28	2,706
1986	1,060	778	1,838	1,823	99%	95	739	223	962	869	90%	22	2,707
1987	1,044	793	1,837	1,824	99%	91	736	224	960	899	94%	18	2,736
1988	1,033	806	1,839	1,837	100%	90	731	227	958	922	96%	17	2,761
1989	1,036	831	1,867	1,855	99%	91	785	240	1,025	971	95%	18	2,838
1990	1,039	839	1,878	1,869	100%	93	783	243	1,026	971	95%	15	2,849
1991	1,019	862	1,881	1,873	100%	88	771	253	1,024	950	93%	12	2,831
1992	997	886	1,883	1,879	100%	86	774	251	1,025	968	94%	8	2,851
1993	982	904	1,886	1,875	99%	81	763	259	1,022	965	94%	8	2,851
1994	970	917	1,887	1,865	99%	77	760	259	1,019	939	92%	7	2,826
1995	967	921	1,888	1,882	100%	75	762	257	1,019	967	95%	8	2,855
1996	966	925	1,891	1,884	100%	70	760	257	1,017	941	93%	6	2,832
1997	959	940	1,899	1,875	99%	67	757	262	1,019	921	90%	7	2,820
1998	954	945	1,899	1,858	98%	55	756	259	1,015	901	89%	6	2,800
1999	937	961	1,898	1,847	97%	52	748	266	1,014	925	91%	6	2,823
2000	945	945	1,890	1,823	96%	38	735	277	1,012	921	91%	6	2,811
2001	958	925	1,883	1,566	83%	24	729	281	1,010	834	83%	2	2,717
2002	945	933	1,878	1,183	63%	16	717	289	1,006	680	68%	2	2,558
2003	923	944	1,867	1,389	74%	7	713	288	1,001	714	71%	1	2,581
2004	912	948	1,860	1,426	77%	3	703	286	989	761	77%	1	2,849
20 Year Ave.	985	889	1,874	1,762	94%	65	748	256	1,004	895	89%	10	2,780
1985-94 Ave.	1,024	839	1,863	1,852	99%	89	758	240	998	933	93%	15	2,792
1995-04 Ave.	947	939	1,885	1,673	89%	41	738	272	1,010	857	1	5	2,762
2005	895	967	1,862	1,526	82%	3	688	300	988	760	77%	1	2,850

Note: Limited Entry went into effect in 1974. Interim-use permits are included in the totals.

[a] Allowable gear per license/permit is measured in fathoms, 150 for drift and 50 for setnet.

Appendix A3.–Sockeye salmon commercial catch by district, in numbers of fish, Bristol Bay, 1985–2005.

Year	Naknek-Kvichak	Egegik	Ugashik	Nushagak	Togiak	Total
1985	8,179,093	7,537,273	6,468,862	1,307,889	209,766	23,702,883
1986	2,892,171	4,852,935	5,002,949	2,719,313	308,688	15,776,056
1987	4,986,002	5,356,669	2,128,652	3,254,720	342,732	16,068,775
1988	3,480,836	6,456,598	1,523,520	1,706,716	822,087	13,989,757
1989	13,809,956	8,901,994	3,146,239	2,788,185	88,932	28,735,306
1990	17,272,224	10,371,762	2,149,009	3,532,543	197,589	33,523,127
1991	10,475,206	6,797,166	2,945,742	5,053,845	549,221	25,821,180
1992	9,395,948	15,646,575	3,320,966	2,789,741	726,446	31,879,676
1993	8,907,876	21,600,858	4,176,900	5,236,557	539,933	40,462,124
1994	16,327,858	10,750,213	4,352,797	3,393,143	400,039	35,224,050
1995	20,279,581	14,425,979	4,509,446	4,445,883	605,328	44,266,217
1996	8,211,983	10,809,115	4,411,055	5,693,523	462,621	29,588,297
1997	589,311	7,517,389	1,402,690	2,506,818	142,569	12,158,777
1998	2,595,439	3,528,845	730,247	2,990,597	190,446	10,035,574
1999	9,452,972	7,388,080	2,256,007	6,175,419	385,411	25,657,889
2000	4,727,061	7,029,397	1,538,790	6,367,208	794,996	20,457,452
2001	5,280,538	2,872,662	480,509	4,734,800	810,096	14,178,605
2002	1,418,938	4,610,374	1,573,234	2,840,031	233,743	10,676,320
2003	3,348,453	2,291,502	1,748,934	6,665,918	706,008	14,760,815
2004	4,715,070	10,209,227	3,139,229	6,104,048	437,234	26,261,802 [a]
20-Year Ave.	7,817,326	8,447,731	2,850,289	4,015,345	447,694	23,661,234
1985-94 Ave.	9,572,717	9,827,204	3,521,564	3,178,265	418,543	26,518,293
1995-04 Ave.	6,061,935	7,068,257	2,179,014	4,852,425	476,845	20,804,175
2005	6,700,586	8,004,125	2,202,202	7,132,342	463,474	24,502,729

[a] Total includes General District catch.

Appendix A4.–Chinook salmon commercial catch by district, in numbers of fish, Bristol Bay, 1985–2005.

Year	Naknek-Kvichak	Egegik	Ugashik	Nushagak	Togiak	Total
1985	5,697	4,015	5,840	67,783	37,106	120,441
1986	3,188	1,883	2,982	65,783	19,880	93,716
1987	5,175	2,959	4,065	45,983	17,217	75,399
1988	6,538	3,103	3,444	16,648	15,606	45,339
1989	6,611	2,034	2,112	17,637	11,366	39,760
1990	5,068	1,146	1,840	14,812	11,130	33,996
1991	3,584	510	589	19,718	6,039	30,440
1992	5,724	694	2,146	47,563	12,640	68,767
1993	7,477	1,478	3,075	62,976	10,851	85,857
1994	6,016	1,243	3,685	119,480	10,486	140,910
1995	5,084	760	1,551	79,942	11,981	99,318
1996	4,195	980	588	72,011	8,602	86,376
1997	2,839	2,047	1,084	64,294	6,114	76,378
1998	2,444	760	346	108,486	14,131	126,167
1999	1,295	712	1,638	10,893	11,919	26,457
2000	1,027	1,061	893	12,055	7,858	22,894
2001	904	950	989	11,568	9,937	24,348
2002	969	268	612	39,473	2,801	44,123
2003	567	131	409	42,615	3,231	46,953
2004	1,360	1,589	863	96,534	9,310	109,656
20-Year Average	3,788	1,416	1,938	50,813	11,910	69,865
1985-94 Average	5,508	1,907	2,978	47,838	15,232	73,463
1995-04 Average	2,068	926	897	53,787	8,588	66,267
2005	1,294	498	1762	61,854	10,461	75,869

Appendix A5.–Chum salmon commercial catch by district, in numbers of fish, Bristol Bay, 1985–2005.

Year	Naknek-Kvichak	Egegik	Ugashik	Nushagak	Togiak	Total
1985	210,107	126,736	131,576	396,740	203,302	1,068,461
1986	262,925	94,666	111,112	488,375	270,057	1,227,135
1987	446,908	145,259	101,074	416,476	419,425	1,529,142
1988	295,571	237,888	94,545	371,196	470,132	1,469,332
1989	310,869	136,185	84,673	523,903	203,178	1,258,808
1990	422,276	123,087	32,013	378,223	102,861	1,058,460
1991	443,189	75,892	60,299	463,780	246,589	1,289,749
1992	167,168	121,472	57,170	398,691	176,123	920,624
1993	43,684	70,628	73,402	505,799	144,869	838,382
1994	219,118	62,961	52,127	328,267	232,559	895,032
1995	236,472	68,325	62,801	390,158	221,126	978,882
1996	124,137	85,151	103,392	324,261	207,094	844,035
1997	8,719	53,139	16,379	185,620	47,459	311,316
1998	82,281	29,405	8,088	208,551	67,595	395,920
1999	259,922	74,890	68,004	170,795	111,677	685,288
2000	68,218	38,857	36,349	114,454	140,175	398,053
2001	16,472	33,579	43,394	526,602	211,701	831,748
2002	19,180	23,516	35,792	276,845	112,987	468,320
2003	34,481	37,116	52,908	740,311	68,154	932,970
2004	29,972	75,061	49,358	458,902	94,025	732,481 [a]
20-Year Ave.	185,083	85,691	63,723	383,397	187,554	906,707
1985-94 Ave.	282,182	119,477	79,799	427,145	246,910	1,155,513
1995-04 Ave.	87,985	51,904	47,647	339,650	128,199	657,901
2005	197,479	63,164	40,315	874,090	124,571	1,299,619

[a] Total includes General District catch.

Appendix A6.–Pink salmon commercial catch by district, in numbers of fish, Bristol Bay, 1985–2005.

Year	Naknek-Kvichak	Egegik	Ugashik	Nushagak	Togiak	Total
1985	39	51	3	48	316	457
1986	106,919	2,749	98	267,117	24,404	401,287
1987	5	0	30	2	20	57
1988	648,569	4,485	218	243,890	58,084	955,246
1989	75	6	29	156	172	438
1990	421,690	11,593	361	54,127	8,746	496,517
1991	102	15	2	69	117	305
1992	214,228	694	525	190,102	93,989	499,538
1993	86	2	2	83	240	413
1994	11,537	145	21	8,562	69,552	89,817
1995	55	1	1	120	294	471
1996	4,590	22	21	2,681	30,308	37,622
1997	39	2	0	50	27	118
1998	11,317	674	247	6,787	6,406	25,431
1999	11	0	3	52	2	68
2000	19,659	32	4	38,309	695	58,699
2001	23	0	0	308	97	428
2002	10	1	1	204	311	527
2003	24	0	0	188	32	244
2004	7,749	0	187	26,150	18,293	52,379
20-Year Average	144,627	2,040	168	83,793	31,079	261,706
1985-94 Average	280,589	3,933	245	152,760	50,955	488,481
1995-04 Average	10,972	175	96	16,539	25,113	52,895
2005	32	0	1	554	2,108	2,695

Note: Averages include even numbered years only.

Appendix A7.–Coho salmon commercial catch by district, in numbers of fish, Bristol Bay, 1985–2005.

Year	Naknek-Kvichak	Egegik	Ugashik	Nushagak	Togiak	Total
1983	7,282	25,954	7,816	81,338	5,711	128,101
1984	3,209	66,589	68,451	260,310	176,053	574,612
1985	10,474	32,667	60,815	20,230	38,636	162,822
1986	5,824	33,607	25,770	68,568	48,306	182,075
1987	5,274	30,789	14,785	13,263	1,292	65,403
1988	29,988	48,981	52,355	52,698	18,468	202,490
1989	22,668	49,175	33,942	77,077	56,972	239,834
1990	16,091	43,897	32,906	7,733	2,690	103,317
1991	17,527	47,486	42,622	5,574	4,531	117,740
1992	18,553	47,780	35,794	84,077	5,328	191,532
1993	1,779	41,603	2,387	14,345	12,615	72,729
1994	5,877	48,436	19,250	5,615	96,062	175,240
1995	981	21,772	13,800	4,896	8,917	50,366
1996	3,601	38,156	13,163	11,401	58,978	125,299
1997	718	35,470	7,156	4,110	2,970	50,424
1998	1,587	29,856	13,007	22,703	52,630	119,783
1999	303	11,464	2,289	2,836	2,653	19,545
2000	952	13,166	1,269	112,819	2,758	130,964
2001	3	12,603	976	3,218	284	17,084
2002	0	7,099	464	93	754	8,410
2003	42	40,577	994	583	1,047	43,243
2004	2,142	2,324	4,744	47,706	15,463	72,379
20-Year Average	7,219	31,845	18,924	27,977	21,568	107,534
1985-94 Average	13,406	42,442	32,063	34,918	28,490	151,318
1995-04 Average	1,033	21,249	5,786	21,037	14,645	63,750
2005	3,308	20,615	8,162	43,189	8	75,282

Appendix A8.–Total salmon commercial catch by district, in numbers of fish, Bristol Bay, 1985-2005.

Year	Naknek-Kvichak	Egegik	Ugashik	Nushagak	Togiak	Total
1985	8,405,410	7,700,742	6,667,096	1,792,690	489,126	25,055,064
1986	3,271,027	4,985,840	5,142,911	3,609,156	671,335	17,680,269
1987	5,443,364	5,535,676	2,248,606	3,730,444	780,686	17,738,776
1988	4,461,502	6,751,055	1,674,082	2,391,148	1,384,377	16,662,164
1989	14,150,179	9,089,394	3,266,995	3,406,958	360,620	30,274,146
1990	18,137,349	10,551,485	2,216,129	3,987,438	323,016	35,215,417
1991	10,939,608	6,921,069	3,049,254	5,542,986	806,497	27,259,414
1992	9,801,621	15,817,215	3,416,601	3,510,174	1,014,526	33,560,137
1993	8,960,902	21,714,569	4,255,766	5,819,760	708,508	41,459,505
1994	16,570,406	10,862,998	4,427,880	3,855,157	808,698	36,525,139
1995	20,522,297	14,516,875	4,587,276	4,920,284	847,600	45,394,332
1996	8,322,312	10,900,288	4,530,995	6,111,030	724,023	30,588,648
1997	616,084	7,626,863	1,432,200	2,866,890	200,676	12,742,713
1998	2,693,068	3,589,540	751,962	3,345,717	336,995	10,717,282
1999	9,714,503	7,475,146	2,327,941	6,359,995	511,662	26,389,247
2000	4,816,917	7,082,513	1,577,305	6,644,845	946,482	21,068,062
2001	5,297,940	2,919,794	525,868	5,276,496	1,032,115	15,052,213
2002	1,439,097	4,641,258	1,610,103	3,156,646	350,596	11,197,700
2003	3,383,567	2,369,326	1,803,245	7,449,615	778,472	15,784,225
2004	4,756,293	10,288,201	3,194,381	6,733,340	574,325	27,233,322 [a]
20-Year Ave.	8,085,172	8,566,992	2,935,330	4,525,538	682,517	24,879,889
1985-94 Ave.	10,014,137	9,993,004	3,636,532	3,764,591	734,739	28,143,003
1995-04 Ave.	6,156,208	7,140,980	2,234,128	5,286,486	630,295	21,616,774
2005	6,902,699	8,087,952	2,252,442	8,112,033	600,622	25,955,748

[a] Total includes General District catch.

Appendix A9.–Commercial sockeye salmon catch, in percent, by gear type and district, Bristol Bay, 1985–2005.

Year	Naknek-Kvichak									Nushagak								
	Drift	Setnet Sec.		NRSHA [a]		Egegik		Ugashik		Drift	Setnet Sec.		WRSHA [b]		Togiak		Total	
		Nak.	Kvi.	Drift	Set	Drift	Set	Drift	Set		Nush.	Igushik	Drift	Set	Drift	Set	Drift	Set
1985	87	13				93	7	96	4	65	35				75	25	90	10
1986	70	30				89	11	94	6	76	24				68	32	90	10
1987	86	14				91	9	93	7	80	20				66	34	90	10
1988	86	14				90	10	91	9	75	25				64	36	85	15
1989	89	11				90	10	87	13	58	42				55	45	87	13
1990	88	12				91	9	91	9	67	33				67	33	86	14
1991	89	11				91	9	89	11	76	24				64	36	86	14
1992	89	11				91	9	90	10	65	35				62	38	87	13
1993	84	16				93	7	90	10	72	28				54	46	86	14
1994	90	10				92	8	94	6	68	32				52	48	88	12
1995	89	11				90	10	95	5	68	32				52	48	87	13
1996	83	17				90	10	95	5	81	19				52	55	88	12
1997	73	27				87	13	88	12	70	30				37	63	87	13
1998	84	8	8			86	14	85	15	72	24	4	76	24	43	57	86	14
1999	85	8	7			85	15	89	11	70	24	6	78	22	53	47	82	18
2000	84	11	5			84	16	87	13	77	17	6	68	32	57	43	80	20
2001	82	16	2	74 [c]	26 [c]	86	14	80	20	77	18	5			66	34	80	20
2002				64 [c]	36 [c]	85	15	88	12	77	22	1	67	33	62	38	79	21
2003	91	9	0	65 [c]	35 [c]	81	19	89	11	83	15	2			63	37	79	21
2004	79	11	10	88	12	86	14	88	12	84	15	1			55	45	79	21
20-Year Ave.	85	14	5			89	11	90	10	73	26	4			58	42	85	15
1985-94 Ave.	86	14				91	9	92	9	70	30				63	37	88	13
1995-04 Ave.	83	13	5	73	27	86	14	88	12	76	22	4	72	28	54	47	83	17
2005				81	19	82	18	87	13	84	14	2			56	44	66	34
Allocation [d]	84	8	8	84	16	86	14	90	10	74	20	6	74	26	n.a.	n.a.	n.a.	n.a.

[a] NRSHA allocation plan enacted in December 2003.

[b] Wood River Special Harvest Area (WRSHA), Nushagak District.

[c] Naknek River Special Harvest Area (NRSHA) prior to allocation plan, fishing periods were alternated between gear types.

[d] BOF enacted allocation plan in 1998, reviewed in December 2003. Historical data prior to 1998 is based on post-season numbers. Inseason numbers are presented for 1998-present, as they were used to make management decisions regarding allocation.

Appendix A10.–Sockeye salmon escapement by district, in numbers of fish, Bristol Bay, 1985–2005.

Year	Naknek-Kvichak[a]	Egegik[b]	Ugashik[c]	Nushagak[d]	Togiak[e]	Total
1985	9,179,014	1,095,204	1,006,407	1,684,760	190,082	13,155,467
1986	3,387,147	1,151,750	1,015,582	2,134,490	271,184	7,960,153
1987	7,281,896	1,273,553	686,894	1,895,961	316,076	11,454,380
1988	5,297,708	1,599,161	654,412	1,524,704	340,712	9,416,697
1989	9,676,244	1,611,566	1,713,281	2,189,501	125,080	15,315,672
1990	9,231,358	2,191,582	749,478	2,144,444	278,202	14,595,064
1991	8,078,885	2,786,925	2,482,001	2,419,488	320,713	16,088,012
1992	6,557,157	1,945,632	2,194,927	2,286,278	266,956	13,250,950
1993	5,908,799	1,517,000	1,413,454	2,296,789	242,475	11,378,517
1994	9,571,245	1,894,977	1,095,068	2,449,616	233,632	15,244,538
1995	11,365,573	1,282,508	1,321,108	2,254,231	240,266	16,463,686
1996	2,835,426	1,075,596	692,167	2,553,995 [f]	212,524	7,369,708
1997	2,747,511	1,104,004	656,641	2,021,529	171,373	6,701,058
1998	3,750,246	1,110,932	924,853	2,441,666	214,626	8,442,323
1999	8,303,878	1,727,772	1,662,042	2,269,861 [f]	231,196	14,194,749
2000	3,654,568	1,032,138	638,420	2,116,842 [f]	390,080	7,832,048
2001	3,194,708	968,872	866,368	2,679,432 [f]	338,616 [g]	9,016,868
2002	2,303,463	1,036,092	905,584	1,722,519 [f]	199,507	6,167,165
2003	5,627,974	1,152,120	790,202	2,241,556 [f]	261,851 [g]	10,041,943
2004	12,836,100	1,290,144	815,104	2,144,690 [f]	154,681 [g]	17,240,719
20-Year Average	6,539,445	1,442,372	1,112,616	2,173,618	249,992	11,566,486
1985-94 Average	7,416,945	1,706,735	1,301,150	2,102,603	258,511	12,785,945
1995-04 Average	5,661,945	1,178,009	924,082	2,244,632	241,472	10,347,027
2005	9,283,980	1,621,734	799,612	2,958,527 [f]	155,778 [g]	14,819,631

[a] Includes counts from Kvichak tower, Branch aerial survey and Naknek tower.

[b] Includes Egegik River. May include King Salmon River and Shosky Creek; see table 14 for specific counts.

[c] Includes Ugashik River. Also includes Mother Goose River and Dog Salmon River system in 1984-2004.

[d] Includes Wood, Igushik, Nuyakuk, Nushagak-Mulchatna and Snake Rivers.

[e] Includes Togiak River, Lake tributaries, Kulukak system and other miscellaneous river systems.

[f] Snake River not surveyed.

[g] Only partial and/ or late survey of Togiak streams in 2001, 2003, 2004, and 2005.

Appendix A11.–Inshore commercial catch and escapement of sockeye salmon in the Naknek-Kvichak District by river system, in numbers of fish, Bristol Bay, 1985–2005.

		Escapement				
Year	**Catch**	**Kvichak[a]**	**Alagnak[b]**	**Naknek[a]**	**Total**	**Total Run**
1985	8,179,093	7,211,046	118,030	1,849,938	9,179,014	17,358,107
1986	2,892,171	1,179,322	230,180	1,977,645	3,387,147	6,279,318
1987	4,986,002	6,065,880	154,210	1,061,806	7,281,896	12,267,898
1988	3,480,836	4,065,216	194,630	1,037,862	5,297,708	8,778,544
1989	13,809,956	8,317,500	196,760	1,161,984	9,676,244	23,486,200
1990	17,272,224	6,970,020	168,760	2,092,578	9,231,358	26,503,582
1991	10,475,206	4,222,788	277,589	3,578,508	8,078,885	18,554,091
1992	9,395,948	4,725,864	224,643	1,606,650	6,557,157	15,953,105
1993	8,907,876	4,025,166	347,975	1,535,658	5,908,799	14,816,675
1994	16,327,858	8,337,840	242,595	990,810	9,571,245	25,899,103
1995	20,279,581	10,038,720	215,713	1,111,140	11,365,573	31,645,154
1996	8,211,983	1,450,578	306,750	1,078,098	2,835,426	11,047,409
1997	589,311	1,503,732	218,115	1,025,664	2,747,511	3,336,822
1998	2,595,439	2,296,074	252,200	1,202,172	3,750,446	6,345,885
1999	9,452,972	6,196,914	481,600	1,625,364	8,303,878	17,756,850
2000	4,727,061	1,827,780	451,300	1,375,488	3,654,568	8,381,629
2001	5,280,538	1,095,348	267,000	1,830,360	3,192,708	8,473,246
2002	1,418,938	703,884	335,661	1,263,918	2,303,463	3,722,401
2003[c]	3,348,453	1,686,804	2,110,000	1,831,170	5,627,974	8,976,427
2004[c]	4,715,070	5,500,134	2,911,600	1,939,374	10,351,108	15,066,178
20 Year Average	7,817,326	4,371,031	485,266	1,558,809	6,415,105	14,232,431
1985-94 Average	9,572,717	5,512,064	215,537	1,689,344	7,416,945	16,989,662
1995-04 Average	6,061,935	3,229,997	754,994	1,428,275	5,413,266	11,475,200
2005[c]	6,706,386	2,320,422	1,713,000	2,744,622	6,778,044	13,484,430

[a] Tower count.

[b] Aerial survey estimates.

[c] Tower counts for the Alagnak River in 2003–2005 were 3,676,146; 5,396,592; and 4,219,026 respectively.

Appendix A12.–Inshore sockeye salmon total run by river system Naknek-Kvichak District, in thousands of fish, Bristol Bay, 1985–2005.

	Kvichak		Alagnak [a]		Naknek		
Year	Number	%	Number	%	Number	%	Total Run [b]
1985	13,394	77.2	264	2	3,699	21	17,357
1986	1,966	31.3	399	6	3,913	62	6,278
1987	9,593	78.2	297	2	2,378	19	12,268
1988	6,720	76.5	320	4	1,739	20	8,779
1989	19,774	84.2	534	2	3,179	14	23,487
1990	17,521	66	555	2	8,427	32	26,503
1991	8,032	43	604	3	9,918	53	18,554
1992	10,445	65	487	3	5,021	31	15,953
1993	9,313	63	817	6	4,687	32	14,817
1994	22,232	86	634	2	3,033	12	25,899
1995	27,431	87	651	2	3,564	11	31,646
1996	3,458	31	706	6	6,860	62	11,024
1997	1,683	50	244	7	1,409	42	3,336
1998	3,412	54	388	6	2,546	40	6,346
1999	12,947	73	1,070	6	3,740	21	17,757
2000	2,862	34	731	9	4,789	57	8,382
2001	1,426	17	409	5	6,639	78	8,474
2002	704	19	336	9	2,671	72	3,711
2003	1,721	19	2,110	24	5,096	57	8,927
2004	7,332	42	6,510	37	3,721	21	17,563
20 Year Average	9,098	55	903	7	4,351	38	14,353
1985-94 Average	11,899	67	491	3	4,599	30	16,990
1995-04 Average	6,298	43	1,316	11	4,104	46	11,717
2005	2,951	18	5,436	33	8,005	49	16,392

[a] Total run is based on aerial survey estimate, not tower counts.

[b] Due to rounding of river system total runs, district total run may not equal the sum of the rows.

Appendix A13.–Inshore commercial catch and escapement of sockeye salmon in the Egegik District by river system, 1985–2005.

		Escapement			
Year	**Catch**	**Egegik[a]**	**Shosky Cr.[b]**	**King Salmon River[b]**	**Total Run**
1985	7,537,273	1,095,204			8,632,477
1986	4,852,935	1,151,320		430	6,004,685
1987	5,356,669	1,272,978		575	6,630,222
1988	6,456,598	1,599,096	65		8,055,759
1989	8,901,994	1,610,916	50	600	10,513,560
1990	10,371,762	2,191,362		220	12,563,344
1991	6,797,166	2,786,880		45	9,584,091
1992	15,646,575	1,945,332		300	17,592,207
1993	21,600,858	1,516,980	20		23,117,858
1994	10,750,213	1,894,932	15	30	12,645,190
1995	14,425,979	1,281,678		830	15,708,487
1996	10,809,115	1,075,596			11,884,711
1997	7,517,389	1,103,964		40	8,621,393
1998	3,528,845	1,110,882		50	4,639,777
1999	7,388,080	1,727,772		625	9,116,477
2000	7,050,899	1,032,138			8,083,037
2001	2,872,662	968,862	10		3,841,534
2002	4,610,374	1,036,092			5,646,466
2003	2,291,502	1,152,030		90	3,443,622
2004	10,209,227	1,290,144			11,499,371
20-Year Average	8,448,806	1,442,208	32	320	9,806,574
1985-94 Average	9,827,204	1,706,500	38	314	11,533,939
1995-04 Average	7,070,407	1,177,916	10	327	8,248,488
2005	8,004,000	1,621,584	0		9,625,584

Note: Blank cells represent no data.

[a] Tower count.

[b] Aerial survey index count.

Appendix A14.–Inshore commercial catch and escapement of sockeye salmon in the Ugashik District, by river system, 1985–2005.

		Escapement			
Year	Catch	Ugashik[a] River	King Salmon[b] River	Dog Salmon[b] River	Total Run
1985	6,468,862	998,232	7,400	775	7,475,269
1986	5,002,949	1,001,492	4,310	9,780	6,018,531
1987	2,128,652	668,964	15,855	2,075	2,815,546
1988	1,523,520	642,972	8,360	3,080	2,177,932
1989	3,146,239	1,681,296	25,480	6,505	4,859,520
1990	2,149,009	730,038	11,340	8,100	2,898,487
1991	2,945,742	2,457,306	12,195	12,500	5,427,743
1992	3,320,966	2,173,692	13,425	7,810	5,515,893
1993	4,176,900	1,389,534	22,570	1,350	5,590,354
1994	4,352,797	1,080,858	8,885	5,325	5,447,865
1995	4,509,446	1,304,058	7,650	9,400	5,830,554
1996	4,411,055	667,518	7,230	17,419	5,103,222
1997	1,402,690	618,396	27,645	10,600	2,059,331
1998	730,274	890,508	27,425	6,920	1,655,127
1999	2,256,007	1,651,572	6,350	4,120	3,918,049
2000	1,538,790	620,040	12,900	5,480	2,177,210
2001	480,509	833,628	22,940	9,800	1,346,877
2002	1,573,234	892,104	11,460	2,020	2,478,818
2003	1,748,934	758,532	27,620	4,000	2,539,086
2004	3,139,229	776,364	22,850	15,890	3,954,333
20-Year Average	2,850,290	1,091,855	15,195	7,147	3,964,487
1985-94 Average	3,521,564	1,282,438	12,982	5,730	4,822,714
1995-04 Average	2,376,633	917,598	16,632	8,270	3,319,134
2005	2,202,202	779,172	0[c]	20,440	3,001,814

[a] Tower count.

[b] Aerial survey.

[c] No fish observed in King Salmon system-see text for explanation.

Appendix A15.–Inshore commercial catch and escapement of sockeye salmon in the Nushagak District by river system, in numbers of fish, Bristol Bay, 1985–2005.

		Escapement							
Year	**Catch**	**Wood [a]**	**Igushik [a]**	**Nuyakuk [a]**	**Nush/Mul [b]**	**Nushagak [c]**	**Snake [d]**	**Total**	**Total Run**
1985	1,307,889	939,000	212,454	429,162	69,300		34,880	1,186,334	2,494,223
1986	2,719,313	818,652	307,728	821,898	168,340		16,780	1,143,160	3,862,473
1987	3,254,720	1,337,172	169,236	163,000	225,034	388,034	1,520	1,895,962	5,150,682
1988	1,706,716	866,778	170,454	319,992	163,208	483,200	4,320	1,524,752	3,231,468
1989	2,788,185	1,186,410	461,610			513,421	28,060	2,189,501	4,977,686
1990	3,532,543	1,069,440	365,802			680,368	28,840	2,144,450	5,676,993
1991	5,053,845	1,159,920	756,126			492,522	10,920	2,419,488	7,473,333
1992	2,789,741	1,286,250	304,920			695,108		2,286,278	5,076,019
1993	5,236,557	1,176,126	405,564			715,099		2,296,789	7,533,346
1994	3,393,143	1,471,890	445,920			509,326	22,480	2,449,616	5,842,759
1995	4,445,883	1,482,162	473,382	69,702	211,605	281,307	17,380	2,254,231	6,700,114
1996	5,693,523	1,649,598	400,746	250,692	252,959	503,651		2,553,995	8,247,518
1997	2,506,818	1,512,396	127,704	272,982	100,053	373,035	8,394	2,021,529	4,528,347
1998	2,990,597	1,755,768	215,904	146,250	312,624	458,874	11,120	2,441,666	5,432,263
1999	6,175,419	1,512,426	445,536	81,006	230,893	311,899	[e]	2,269,861	8,445,280
2000	6,367,208	1,300,026	413,316	129,468	274,032	403,500	[e]	2,116,842	8,484,050
2001	4,734,800	1,458,732	409,596	184,044	627,060	811,104	[e]	2,679,432	7,414,232
2002	2,840,031	1,283,682	123,156	68,928	246,753	315,681	[e]	1,722,519	4,562,550
2003	6,665,918	1,459,782	194,088	116,646	463,888	580,534	[e]	2,234,404	8,900,322
2004	6,104,048	1,543,342	109,650	77,406	414,292	491,698	[e]	2,144,690	8,248,738
20-year Ave.	4,015,345	1,313,478	325,645	223,655	268,574	500,465	16,790	2,098,775	6,114,120
1985-94 Ave.	3,178,265	1,131,164	359,981	433,513	156,471	559,635	18,475	1,953,633	5,131,898
1995-04 Ave.	4,852,425	1,495,791	291,308	139,712	313,416	453,128	12,298	2,243,917	7,096,341
2005	7,132,342	1,496,550	365,709	251,016	845,252	1,096,268	[e]	2,958,527	10,090,869

Note: Blank cells represent no data.

[a] Tower count.

[b] Aerial survey estimates for 1985. Escapement estimates for 1987-88, and 1995-2005, were derived from the difference between lower river sonar estimates and Nuyakuk Tower counts. Escapement estimates for 1986 based on the average ratio of Nuyakuk/Nushagak-Mulchatna in years when data was available. In 1987, the counting tower was terminated early due to high water. Tower estimate was expanded using aerial survey data.

[c] Total escapements from 1989 on are determined for the entire Nushagak River drainage using Portage Creek sonar estimates.

[d] Aerial survey estimate 1985-91, 1994-95 and 1997; weir count not surveyed in 1992, 1993 or 1996 due to lack of funding.

[e] Snake River escapement is not included this year because staff was unable to conduct aerial surveys.

Appendix A16.–Inshore sockeye salmon total run by river system, in thousands of fish, Nushagak District, 1985–2005.

	Wood		Igushik		Nushagak								Snake [a]		Total Run[b]
	Total Run		Total Run		Nushagak Escapement[c]					Catch	Total Run				
					Nuyakuk		Nush-Mul		Sonar [d]	Total					
Year	Number	%	Number	%	Number	%	Number	%	Estimate	Number	Number	%	Number	%	
1985	1,593	53	460	15	429	86	69	14	498	407	905	30	35	1	2,993
1986	1,772	37	877	18	822	83	168	17	990	1,197	2,187	45	17	0	4,853
1987	2,828	55	617	12	163	42	225	58	388	1,317	1,705	33	2	0	5,152
1988	1,749	54	406	13	320	66	163	34	483	590	1,073	33	4	0	3,232
1989	2,519	51	1,214	24					513	704	1,217	24	28	1	4,978
1990	2,610	46	1,280	23					680	1,077	1,757	31	29	1	5,676
1991	3,303	44	2,424	32					493	1,243	1,736	23	11	0	7,474
1992	2,481	49	794	16					695	1,107	1,802	35			5,077
1993	3,725	49	1,580	21					715	1,513	2,228	30			7,533
1994	2,957	51	1,300	22					509	1,034	1,543	26	42	1	5,842
1995	4,022	60	1,902	28	70	25	212	75	281	475	756	11	20	0	6,700
1996	5,007	61	1,481	18	251	50	253	50	504	1,256	1,760	21			8,248
1997	3,365	74	291	6	273	73	100	27	373	491	864	19	8	0	4,528
1998	3,901	72	571	11	146	32	313	68	459	490	949	17	11	0	5,432
1999	5,930	70	1,563	19	81	26	231	74	312	640	952	11			8,445
2000	5,278	62	1,748	21	129	32	274	68	404	1,054	1,458	17			8,484
2001	3,987	54	1,315	18	184	23	627	77	811	1,301	2,112	28			7,414
2002	3,715	81	207	5	69	22	247	78	316	325	641	14			4,563
2003	5,647	63	1,018	11	117	20	464	80	581	1,655	2,236	25			8,901
2004	5,375	65	564	7	77	16	414	84	492	1,801	2,293	28			8,232
20-Year Ave.	3,588	58	1,081	17	224	43	269	57	525	984	1,509	25	19	0	6,188
1985-94 Ave.	2,554	49	1,095	20	434	69	156	31	596	1,019	1,615	31	21	0	5,281
1995-04 Ave.	4,623	66	1,066	14	140	32	314	68	453	949	1,402	19	13	0	7,095
2005	4,771	47	1,878	19	251	23	845	77	1,096	2,346	3,442	34			10,091

Note: Blank cells represent no data.

[a] Snake River escapement is not included from 1999-2005 because staff was unable to conduct aerial surveys.

[b] Due to rounding, the district total runs may not equal the sum of the rows. District total run is the sum of Wood, Igushik, Nushagak, and Snake total run numbers.

[c] Escapement percentages represent the portion of sonar escapement that is accounted for in the Nuyakuk or Nushagak-Mulchatna.

[d] Sonar estimates not available for 1985-1986. Value derived from sum of escapement for the entire Nushagak River.

Appendix A17.–Inshore commercial catch and escapement of sockeye salmon in the Togiak District by river system, in numbers of fish, Bristol Bay, 1985–2005.

	Catch				Escapement						
					Togiak						
Year	Togiak	Kulukak	Os/Mat[a]	Total	Lake[b]	River[c]	Tributaries[d]	Kulukak[e]	Other[f]	Total	Total Run
1985	133,263	44,120	32,383	209,766	136,542	3,600	13,340	36,600		190,082	399,848
1986	191,158	100,466	17,064	308,688	168,384	20,000	15,000	42,800	25,000	271,184	579,872
1987	274,613	45,401	22,718	342,732	249,676	10,400	18,200	37,800		316,076	658,808
1988	673,408	143,112	5,567	822,087	276,612	18,800	13,600	31,700		340,712	1,162,799
1989	68,375	14,116	6,441	88,932	84,480	15,200	4,560	20,840		125,080	214,012
1990	168,688	27,311	1,590	197,589	141,977	17,540	29,605	49,600	39,480	278,202	475,791
1991[g]	522,090	33,425	6,437	549,221	254,683	15,980	7,740	23,940	18,370	320,713	869,934
1992	610,575	108,358	7,513	726,446	199,056	6,060	10,400	26,440	25,000	266,956	993,402
1993	475,799	58,616	5,518	539,933	177,185	4,600	11,330	31,800	17,560	242,475	782,408
1994	321,121	76,781	2,137	400,039	154,752	6,200	13,220	29,740	29,720	233,632	633,671
1995	527,143	76,056	2,129	605,328	185,718	6,520	18,988	14,620	14,420	240,266	845,594
1996	381,539	76,833	1,691	460,063	156,954	18,320	11,900	18,980	6,370	212,524	672,587
1997	91,639	47,979	2,951	142,569	131,682	12,300	8,325	7,950	11,116	171,373	313,942
1998	112,993	75,279	2,155	190,427	153,576	9,780	12,120	12,950	26,200	214,626	405,053
1999	346,749	38,662	0	385,411	155,898	10,800	29,438	12,300	22,760	231,196	616,607
2000	727,384	67,612	0	794,996	311,970	25,200	15,075	22,350	15,485	390,080	1,185,076
2001[h]	798,426	9,762	1,908	810,096	296,676	6,520	150	17,280	17,990	338,616	1,148,712
2002	214,094	19,112	537	233,743	162,402	4,100	12,075	8,500	12,430	199,507	433,250
2003	650,066	55,081	861	706,008	232,302			8,004	21,545	261,851	967,859
2004[h,i]	357,354	80,204	1,095	438,653	129,462	6,100	75		19,044	154,681	593,334
20-Year Ave.	382,324	59,914	6,035	447,636	187,999	11,475	12,902	23,905	20,156	249,992	697,628
1985-94 Ave.	343,909	65,171	10,737	418,543	184,335	11,838	13,700	33,126	25,855	258,511	677,055
1995-04 Ave.	420,739	54,658	1,333	476,729	191,664	11,071	12,016	13,659	16,736	241,472	718,201
2005[i]	409,700	53,774	0	463,474	149,178	5,580	1,020		3,713	159,491	622,965

Note: Blank cells represent no data.

[a] Catches in the Osviak and Matogak sections were combined.

[b] Tower count.

[c] Aerial survey estimate.

[d] Aerial survey estimate includes Gechiak, Pungokepuk, Kemuk, Nayorurun, and Ongivinuck River systems. Aerial survey estimates prior to 1986 also include Ungalikthluk, Negukthluk, Matogak, Osviak, and other miscellaneous river systems when surveyed.

[e] Aerial survey estimate includes Kulukak River and Lake and Tithe Creek ponds.

[f] Aerial survey estimate includes Matogak, Osviak, Slug, Negukthlik, and Ungalikthluk and Quigmy Rivers. Prior to 1986 estimates for these systems were included under tributaries when surveyed.

[g] Catches are based on weekly processor reports. Fish tickets were not coded by section.

[h] Only the Ongivinuk River was surveyed for sockeye escapement in tributaries.

[i] Partial survey.

Appendix A18.–Inshore total run of sockeye salmon by district, in numbers of fish, Bristol Bay, 1985–2005.

Year	Naknek-Kvichak	Egegik	Ugashik	Nushagak	Togiak	Total
1985	17,358,107	8,632,477	7,475,269	2,992,649	399,848	36,858,350
1986	6,279,318	6,004,685	6,018,531	4,853,803	579,872	23,736,209
1987	12,267,898	6,630,222	2,815,546	5,150,681	658,808	27,523,155
1988	8,778,544	8,055,759	2,177,932	3,231,420	1,162,799	23,406,454
1989	23,486,200	10,513,560	4,859,520	4,977,686	214,012	44,050,978
1990	26,503,582	12,563,344	2,898,487	5,676,987	475,791	48,118,191
1991	18,554,091	9,584,091	5,427,743	7,473,333	869,934	41,909,192
1992	15,953,105	17,592,207	5,515,893	5,076,019	993,402	45,130,626
1993	14,816,675	23,117,858	5,590,354	7,533,346	782,408	51,840,641
1994	25,899,103	12,645,190	5,447,865	5,842,759	633,671	50,468,588
1995	31,645,154	15,708,487	5,830,554	6,700,114	845,594	60,729,903
1996	11,047,409	11,884,711	5,103,222	8,247,518	672,587	36,955,447
1997	3,336,822	8,621,393	2,059,331	4,527,953	313,942	18,859,441
1998	6,345,885	4,639,777	1,655,127	5,432,143	405,053	18,477,985
1999	17,738,850	9,116,477	3,918,049	8,445,280	616,607	39,835,263
2000	8,381,629	8,083,037	2,177,210	8,484,050	1,185,076	28,311,002
2001	8,473,246	3,841,534	1,346,877	7,414,232	1,148,712	22,224,601
2002	3,722,401	5,646,466	2,478,818	4,562,550	433,250	16,843,485
2003	8,976,427	3,443,622	2,539,136	8,900,322	967,859	24,827,366
2004	15,066,178	11,499,371	3,954,333	8,248,738	591,915	39,360,535
20-Year Average	14,231,531	9,891,213	3,964,490	6,188,579	697,557	34,973,371
1985-94 Average	16,989,662	11,533,939	4,822,714	5,280,868	677,055	39,304,238
1995-04 Average	11,473,400	8,248,488	3,106,266	7,096,290	718,060	30,642,503
2005	15,984,566	9,625,859	3,001,814	10,090,869	622,965	39,326,073

Appendix A19.–Chinook salmon harvest, escapement and total runs in the Nushagak District, in numbers of fish, Bristol Bay, 1985–2005.

	Harvests by Fishery				Inriver	Spawning	
Year	Commercial	Sport	Subsistence	Total	Abundance [a]	Escapement [b]	Total Run
1985	67,783	1,838	7,900	77,521		115,720	193,241
1986	65,783	5,353	12,600	83,736	43,434	33,291	117,027
1987	45,983	4,425	12,200	62,608	84,309	75,924	138,532
1988	16,648	2,818	10,079	29,545	56,905	50,945	80,490
1989	17,637	3,614	8,122	29,373	78,302	72,600	101,973
1990	14,812	3,486	12,407	30,705	63,955	55,931	86,636
1991	19,718	5,551	13,627	38,896	104,351	94,733	133,629
1992	47,563	4,755	13,588	65,906	82,848	74,094	140,000
1993	62,976	5,900	17,709	86,585	97,812	86,705	173,290
1994	119,480	10,627	15,490	145,597	95,954	83,102	228,699
1995	79,943	4,951	13,701	98,595	85,622	77,018	175,613
1996	72,011	5,391	15,941	93,343	52,127	42,227	135,570
1997	64,156	3,497	15,318	82,971		82,000	164,971
1998	117,079	5,827	12,258	135,164	117,495	108,037	243,201
1999	10,893	4,237	10,057	25,187	62,331	54,703	79,890
2000	12,055	6,017	9,470	27,542	56,374	47,674	75,216
2001	11,568	5,899	26,939	44,406	99,155	83,272	127,678
2002	39,473	3,693	11,281	54,447	87,141	79,790	134,237
2003	42,615	5,590	18,686	66,891	80,028	68,606	135,497
2004	93,414	6,813	15,610	115,837	116,400	105,442	221,279
20-Year Ave.	51,080	5,014	13,649	69,743	81,364	74,591	144,334
1985-94 Ave.	47,838	4,837	12,372	65,047	78,652	74,305	139,352
1995-04 Ave.	54,321	5,192	14,926	74,438	84,075	74,877	149,315
2005	61,854	5,602 [c]	16,397 [c]	83,854	171,907	160,254	244,107

Note: Blank cells represent no data.

[a] Inriver abundance estimated by sonar below the village of Portage Creek.

[b] Spawning escapement estimated from the following: 1985 - correlation between index counts and total escapement estimates when aerial surveys were complete (results rounded to the nearest thousand fish). 1997 comprehensive aerial surveys. 1986–1996, 1998–2005 - Inriver abundance estimated by sonar minus inriver harvests.

[c] Data unavailable at the time of publication. A 5-year average is reported.

Appendix A20.–Chinook salmon harvest, escapement and total runs in the Togiak District, in numbers of fish, Bristol Bay, 1985–2005.

	Harvests by Fishery				Spawning	Total
Year	Commercial	Sport[a]	Subsistence	Total	Escapement[b]	Run
1985	37,106	224	600	37,930	14,000	51,930
1986	19,880	525	700	21,105	8,000	29,105
1987	17,217	137	700	18,054	11,000	29,054
1988	15,606	0	429	16,035	10,000	26,035
1989	11,366	234	551	12,151	10,540	22,691
1990	11,130	172	480	11,782	9,107	20,889
1991	6,039	284	470	6,793	12,667	19,460
1992	12,640	271	1,361	14,272	10,413	24,685
1993	10,851	225	784	11,860	16,035	27,895
1994	10,486	663	904	12,053	19,353	31,406
1995	11,981	581	448	13,010	16,438	29,448
1996	8,602	790	471	9,863	11,476	21,339
1997	6,114	1,165	667	7,946	11,495	19,441
1998	14,131	763	782	15,676	11,666	27,342
1999	11,919	644	1,244	13,807	12,263	26,070
2000	7,858	470	1,116	9,444	16,897	26,341
2001	9,937	1,006	1,612	12,555	15,185	27,740
2002	2,801	76	703	3,580	14,265	17,845
2003	3,231	706	1,208	5,145	5,668	10,813
2004	9,310	1,388	1,094	11,792	15,990	27,782
20-Year Ave.	11,910	516	816	13,243	12,623	25,866
1985-94 Ave.	15,232	274	698	16,204	12,112	28,315
1995-04 Ave.	8,588	759	935	10,282	13,134	23,416
2005	10,461	729 [c]	1,147 [c]	12,337	13,521	25,858

[a] Sport fish harvest estimate only includes the Togiak River Section the nearest thousand fish.

[b] Spawning escapement estimated from comprehensive aerial surveys. Estimates for 1984–1988 are rounded to the nearest thousand fish.

[c] Partial survey Estimate.

Appendix A21.–Inshore commercial catch and escapement of chum salmon in the Nushagak and Togiak Districts, in numbers of fish, 1985–2005.

	Nushagak District			Togiak District		
Year	Catch	Escapement [a]	Total Run	Catch	Escapement [b]	Total Run
1985	396,740	288,000	684,740	203,302	212,000	415,302
1986	488,375	168,275	656,650	270,057		270,057
1987	416,476	147,433	563,909	419,425	361,000	780,425
1988	371,196	186,418	557,614	470,132	412,000	882,132
1989	523,903	377,512	901,415	203,178	143,890	347,068
1990	378,223	329,793	708,016	102,861	67,460	170,321
1991	463,780	287,280	751,060	246,589	149,210	395,799
1992	398,691	302,678	701,369	176,123	120,000	296,123
1993	505,799	217,230	723,029	144,869	98,470	243,339
1994	328,267	378,928	707,195	232,559	229,470	462,029
1995	390,158	212,612	602,770	221,126	163,040	384,166
1996	331,414	225,331	556,745	206,226	117,240	323,466
1997	185,620	61,456	247,076	47,459	106,580	154,039
1998	208,551	299,443	507,994	67,408	102,455	169,863
1999	170,795	242,312	413,107	111,677	116,183	227,860
2000	114,454	141,323	255,777	140,175	80,860 [c]	221,035
2001	526,602	564,373	1,090,975	211,701	252,610	464,311
2002	276,845	419,969	696,814	112,987	154,360	267,347
2003	740,311	295,413	1,035,724	68,406	39,090 [d]	107,496
2004	470,248	283,805	754,053	94,025	103,810	197,835
20-Year Ave.	384,322	271,479	655,802	187,514	159,459	339,001
1985-94 Ave.	427,145	268,355	695,500	246,910	199,278	426,260
1995-04 Ave.	341,500	274,604	616,104	128,119	123,623	251,742
2005	874,090	448,059	1,322,149	124,751	108,346	233,097

Note: Blank cells represent no data.

[a] Escapement based on sonar estimates from the Portage Creek site. Estimates for 1985 are rounded to the nearest thousand fish.

[b] Escapement estimates based on aerial surveys. Estimates for 1985-88 rounded to the nearest thousand fish.

[c] No escapement counts were made for the Togiak River.

[d] Only a partial count was made for the Togiak River.

Appendix A22.–Inshore commercial catch and escapement of pink salmon in the Nushagak District by river system, in numbers of fish, Bristol Bay, 1966–2005, even years only.

		Escapement							
Year	**Catch**	**Wood[b]**	**Igushik[c]**	**Nuyakuk[d]**	**Nush/Mul[e]**	**Nushagak[f]**	**Snake[g]**	**Total**	**Total Run**
1966	2,337,066			1,442,424				1,442,424	3,779,490
1968	1,705,150			2,161,116				2,161,116	3,866,266
1970	417,834			152,580				152,580	570,414
1972	67,953			58,536				58,536	126,489
1974	413,613	44,800	7,500	529,216	3,100		900	585,516	999,129
1976	739,590	21,986	5,070	794,478	41,800		100	863,434	1,603,024
1978	4,348,336	205,000	16,210	8,390,184	771,600		3,483	9,386,477	13,734,813
1980	2,202,545	31,150	3,500	2,626,746	123,000		800	2,785,196	4,987,741
1982	1,339,272	36,100	8,430	1,592,096	19,130		900	1,656,656	2,995,928
1984	3,127,153	81,400	6,190	2,760,312	73,050		5,500	2,926,452	6,053,605
1986	267,117					72,189		72,189	339,306
1988	243,890					494,610		494,610	738,500
1990	54,127					801,430		801,430	855,557
1992	190,102					[h]			
1994	7,337					191,772		191,772	199,109
1996	2,681					821,312		821,312	823,993
1998	6,808	942				132,402		133,344	140,152
2000	38,309					135,285		135,285	173,594
2002	204					317,659		317,659	317,863
2004	25,886					556,065		581,951	607,837
Average	906,323	52,867	6,764	1,944,653	150,954	391,414	1,676	1,323,925	2,266,059

Note: Blank cells represent no data.

[a] Includes even-years only.

[b] Aerial survey estimate 1974-84; tower count 1964.

[c] Aerial survey estimate 1964-80; aerial survey estimates and tower count 1976 and 1982–1984.

[d] Tower count 1964-84. Survey estimate below counting tower 1964 and 1982–1984.

[e] Aerial survey estimate.

[f] Sonar estimate from Portage Creek.

[g] Aerial survey estimate 1964, 1974-76 and 1980-84, and weir count 1978.

[h] No escapement estimate. Sonar project terminated early due to budget constraints.

Appendix A23.–Coho salmon harvest, escapement and total runs in the Nushagak Drainage, in numbers of fish, Bristol Bay, 1985–2005.

	Harvests by Fishery						Inriver	Spawning	Total
	Commercial	Subsistence[a]			Sport	Total	Run[b]	Escapement[c]	Run
Year	Harvest	Lower	Upper	Total	Total	Harvest			
1985	20,230	4360	1,646	6,006	130	26,366	89,862	88,086	114,452
1986	68,568	6533	2,617	9,150	1,576	79,294	52,722	48,529	127,823
1987	13,263	4149	1,209	5,358	1,007	19,628	24,923	22,707	42,335
1988	52,698	3515	1,112	4,627	557	57,882	134,069	132,400	190,282
1989	77,077	6971	1,159	8,130	2,392	87,599	84,628	81,077	168,676
1990	7,733	4856	766	5,622	438	13,793	141,704	140,500	154,293
1991	5,574	8915	1,275	10,190	874	16,638	42,965	40,816	57,454
1992	84,077	4962	1,534	6,496	752	91,325			
1993	14,345	4463	387	4,850	194	19,389	42,742	42,161	61,550
1994	5,615	4302	406	4,708	1,143	11,466	82,019	80,470	91,936
1995	4,896	3233	478	3,711	725	9,332	46,340	45,137	54,469
1996	11,401	3603	1,080	4,683	3,488	19,572	187,028	182,460	202,032
1997	4,110			3,433	500	8,043	43,369	42869	50,912
1998	22,703	201	254	455	1,368	24,526	104,948	103194	127,720
1999	2,836	3,054	244	3,298	618	6,752	34,853	33,991	40,743
2000	112,819	3,811	768	4,579	2,219	119,617	213,062	210,075	329,692
2001	3,218	4,851	612	5,463	2,357	11,038	75,961	72,992	84,030
2002	93	4,054	511	4,565	1,416	6,074	52,194	50,267	56,341
2003	583	120	1,310	1,430	917	2,930			
2004	47,750	3,109	865	3,974	3,436	55,160	152,613	148,312	203,472
20-Year Average	27,979	4,161	960	5,036	1,305	34,321	89,222	87,002	118,397
1985-94 Average	34,918	5,303	1,211	6,514	906	42,338	77,293	75,194	110,012
1995-04 Average	21,041	2,893	680	3,559	1,704	26,304	101,152	98,811	127,712
2005	43,019	3,000	800	3,800 [d]	1,500 [d]	48,319			

Note: Blank cells represent no data.

[a] Subsistence harvest estimated by expanding fishing permit returns; excludes estimates for the communities of Manokotak and Wood River. Estimates for 1985–1986 were based on community where permit was issued: 1987 based on community where permit issued and Nushagak watershed fishing site: 1988–present on community of residence and watershed fishing site.

[b] Inriver run estimated by sonar; sonar estimates expanded for years that terminated prior to August 25. Sonar stopped July 21 in 2003.

[c] Spawning escapement estimated by sonar minus sport and subsistence harvests upriver of Portage Creek sonar site.

[d] Estimate based on 5 year average. Final numbers not available at this time.

Appendix A24.–Coho salmon harvest by fishery, escapement and total runs for the Togiak River, in numbers of fish, Bristol Bay, 1985–2005.

	Harvests by Fishery				Spawning	Total
Year	Commercial	Subsistence[a]	Sport	Total	Escapement[b]	Run
1985	35,765	1,500	0	37,265	33,210	70,475
1986	28,030	500	2,851	31,381	21,400	52,781
1987	1,284	1,600	183	3,067	16,000	19,067
1988	8,744	792	1,238	10,774	25,770	36,544
1989	35,814	976	416	37,206		
1990	2,296	1,111	367	3,774	21,390	25,164
1991	4,262	1,238	87	5,587	25,260	30,847
1992	3,918	1,231	251	5,400	80,100	85,500
1993	12,613	743	330	13,686		
1994	88,522	910	531	89,963		
1995	8,910	703	408	10,021		
1996	58,369	199	1,382	59,950	64,980	124,930
1997	2,976	260	780	4,016	20,625	24,641
1998	52,783	310	1,020	54,113	25,335	79,448
1999	2,653	217	1,109	3,979	3,855[c]	7,834
2000	2,758	342	840	3,940		
2001	3,218	388	904	4,510		
2002	754	241	1,475	2,470		
2003	961	883	2,086	3,930	6,900[c]	10,830
2004	15,463	204	2,321	17,988		17,988
20-Year Average	18,505	717	929	20,151	28,735	45,081
1985-94 Average	22,125	1,060	625	23,810	31,876	45,768
1995-04 Average	14,885	375	1,233	16,492	24,339	44,279
2005	8	412[d]	1,525[d]	1,945		1,945

Note: Blank cells represent no data.

[a] Subsistence harvest estimated by expanding permit returns; Estimates for 1984–1987 were based on community where permit was issued; 1988–present on community of residence.

[b] Expanded estimates from aerial surveys.

[c] Results of a partial survey.

[d] Estimate.

Appendix A25.–Average round weight (lbs.) of the commercial salmon catch by species, Bristol Bay, 1985–2005.

Year	Sockeye	Chinook	Chum	Pink	Coho
1985	5.8	17.9	6.8		8.0
1986	6.0	18.8	6.7	3.5	6.7
1987	6.0	20.5	6.5		7.0
1988	6.2	18.7	7.0	3.6	7.8
1989	5.6	19.1	6.3		7.4
1990	5.7	16.9	6.3	3.8	7.5
1991	5.7	15.9	6.4		7.3
1992	5.7	16.8	6.4	3.7	7.0
1993	6.0	17.4	6.5		6.8
1994	5.5	18.0	6.5	3.7	8.2
1995	5.5	19.8	6.3	3.6	6.7
1996	6.3	18.0	7.3	3.5	6.8
1997	6.0	16.4	7.3	3.4	6.3
1998	5.7	17.7	6.4	3.3	8.4
1999	5.3	14.3	6.7	3.2	6.4
2000	6.1	15.7	6.9	3.7	7.6
2001	6.7	17.4	8.2	2.8	7.1
2002	6.1	18.2	7.1	3.8	6.8
2003	6.3	16.0	6.5	4.0	6.9
2004	5.8	15.4	6.6	4.1	6.8
20-Year Average	5.9	17.4	6.7	3.6	7.2
1985-94 Average	5.8	18.0	6.5	3.7	7.4
1995-04 Average	6.0	16.9	6.9	3.5	7.0
2005	6.3	16.6	7.1	3.5	6.3

Note: Blank cells represent no data.

Appendix A26.–Average price paid in dollars per pound for salmon, by species, Bristol Bay, 1985–2005.

Year	Sockeye	Chinook	Chum	Pink	Coho
1985	0.85	1.02	0.31	0.20	0.71
1986	1.42	1.03	0.31	0.15	0.68
1987	1.35	1.24	0.26		0.69
1988	1.93	1.05	0.43	0.34	1.14
1989	1.07	0.80	0.26	0.17	0.67
1990 [a]	1.04	0.91	0.26	0.27	0.74
1991	0.70	0.68	0.22	0.11	0.58
1992	1.04	0.89	0.24	0.12	0.58
1993	0.62	0.76	0.21	0.11	0.52
1994	0.70	0.47	0.22	0.04	0.45
1995	0.75	0.65	0.20	0.11	0.43
1996	0.75	0.50	0.10	0.05	0.30
1997	0.85	0.55	0.10	0.05	0.46
1998	1.10	0.50	0.10	0.10	0.50
1999	0.80	0.50	0.10	0.05	0.30
2000	0.64	0.48	0.09	0.08	0.38
2001	0.40	0.30	0.11	0.07	0.39
2002	0.45	0.30	0.10	0.05	0.30
2003	0.50	0.30	0.09	0.03	0.30
2004	0.46	0.38	0.09	0.05	0.34
20-Year Average	0.88	0.70	0.20	0.12	0.54
1985-94 Average	1.07	0.89	0.27	0.17	0.68
1995-04 Average	0.67	0.45	0.11	0.06	0.37
2005	0.60	0.56	0.10	0.02	0.30

Note: Blank cells represent no data. Price does not include all post-season adjustments.

[a] Price paid in Nushagak District. Bristol Bay average unavailable.

Appendix A27.–Estimated exvessel value of the commercial salmon catch by species paid to fishermen, in thousands of dollars, Bristol Bay, 1985–2005.

Year	Sockeye	Chinook	Chum	Pink	Coho	Total
1985	115,402	2,188	2,218		923	120,731
1986	135,689	1,819	2,522	207	826	141,063
1987	130,847	1,912	2,594		314	135,667
1988	168,586	891	4,418	1,171	1,792	176,858
1989	173,963	609	2,029		1,186	177,787
1990	198,897	520	1,752	508	582	202,259
1991	103,750	328	1,807		499	106,384
1992	190,368	1,029	1,359	222	767	193,745
1993	152,034	1,131	989		257	154,411
1994	138,007	1,190	1,043	15	650	140,905
1995	183,262	1,272	1,240		129	185,903
1996	139,208	788	615	7	254	140,872
1997	61,728	689	200		150	62,767
1998	62,948	1,116	294	8	521	64,887
1999	109,495	186	438		38	110,157
2000	80,331	172	236	17	363	81,119
2001	38,250	127	656		48	39,081
2002	29,164	240	330	0	18	29,752
2003	46,917	213	473		89	47,692
2004	68,968	645	425	10	162	70,210
20 Year Average	116,391	853	1,282	197 [a]	478	119,113
1985-94 Average	150,754	1,162	2,073	354 [a]	780	154,981
1995-04 Average	82,027	545	491	8 [a]	177	83,244
2005	93,268	711	832	0	143	94,954

Note: Value paid to fishermen, derived from price per pound times commercial catch. Blank cells represent no data.

[a] Includes even-years only.

Appendix A28.–South Unimak and Shumigan Island preseason sockeye allocation, actual sockeye and chum harvest in thousands of fish, Alaska Peninsula, 1985–2005.

	South Unimak			Shumigan Island			Total		
	Sockeye			Sockeye			Sockeye		
Year	Actual	Quota[a]	Chum	Actual	Quota[a]	Chum	Actual	Quota[a]	Chum
1985	1,495	1,380	345	367	305	134	1,862	1,685	479
1986	314	907	252	156	200	99	470	1,107	351
1987	652	635	406	141	140	37	793	775	443
1988	474	1,263	465	282	279	62	756	1,542	527
1989	1,348	1,199	408	397	264	48	1,745	1,463	456
1990	1,091	1,087	455	256	240	64	1,347	1,327	519
1991	1,216	1,573	669	333	347	102	1,549	1,920	771
1992	2,047	1,959	324	410	432	102	2,457	2,391	426
1993	2,365	2,375	382	607	524	150	2,972	2,899	532
1994	1,001	2,938	374	460	648	208	1,461	3,586	582
1995	1,451	2,987	342	653	659	195	2,104	3,646	537
1996	572	2,564	129	446	566	228	1,018	3,130	357
1997	1,179	1,840	196	449	406	126	1,628	2,246	322
1998	975	1,529	195	314	336	50	1,289	1,865	245
1999	1,106	1,024	187	269	226	58	1,375	1,250	245
2000	892	1,650	169	359	363	70	1,251	2013	239
2001	271		185	130		149	401		334
2002	356		201	235		178	591		379
2003	336		121	117		161	453		282
2004	532		131	816		357	1,348		488
20-yr Average	984	1,682	297	360	371	129	1,344	2,053	426
1985-94 Average	1,200	1,532	408	341	338	101	1,541	1,870	509
1995-04 Average	767	1,932	186	379	426	157	1,146	2,358	343
2005	437		144	567		282	1,004		426

Note: South Unimak includes statistical area 284 in June and July, while Shumigan Islands includes statistical area 282 in June only.

[a] The sockeye quota management system was initiated in 1974, and is based on 8.3 % of the Bristol Bay projected inshore harvest and traditional harvest patterns. This quota system was removed in 2001.

Appendix A29.–Subsistence salmon harvest, by district and species, Bristol Bay, 1985–2005.

Year [a]	Permits Issued	Sockeye	Chinook	Chum	Pink		Coho	Total
NAKNEK KVICHAK DISTRICT								
1985	544	107,543	1,179	540	27		1,103	110,392
1986	412	77,283	1,295	695	2,007		650	81,930
1987	407	86,706	1,289	756	490		1,106	90,347
1988	391	88,145	1,057	588	917		813	91,520
1989	411	87,103	970	693	277		1,927	90,970
1990	466	92,326	985	861	1,032		726	95,930
1991	518	97,101	1,152	1,105	191		1,056	100,605
1992	571	94,304	1,444	2,721	1,601		1,152	101,222
1993	560	101,555	2,080	2,476	762		2,025	108,898
1994	555	87,662	1,843	503	460		1,807	92,275
1995	533	75,644	1,431	1,159	383		1,791	80,407
1996	540	81,305	1,574	816	794		1,482	85,971
1997	533	85,248	2,764	478	422		1,457	90,368
1998	567	83,095	2,433	784	1,063		1,592	88,967
1999	528	85,315	1,567	725	210		856	88,674
2000	562	61,817	894	560	845		937	65,053
2001	506	57,250	869	667	383		740	59,909
2002	471	52,805	837	909	1,137		943	56,632
2003	489	61,443	1,221	259	198		812	63,934
2004	481	71,110	1,075	469	1,080		566	74,300
20 Year Average	502	81,738	1,398	888	714	[c]	1,177	85,915
1985-1994 Average	484	91,973	1,329	1,094	776	[c]	1,237	96,409
1995-2004 Average	521	71,503	1,466	683	651	[c]	1,118	75,421
2005 [b]	502	60,885	979	573	729		800	63,966
EGEGIK DISTRICT								
1985	23	582	14	21	1		203	821
1986	41	1,052	69	58	21		319	1,519
1987	49	3,350	87	139	2		284	3,862
1988	52	1,405	97	87	54		333	1,976
1989	50	1,636	50	33	1		414	2,134
1990	61	1,105	53	85	39		331	1,613
1991	70	4,549	82	141	32		430	5,234
1992	80	3,322	124	270	51		729	4,496
1993	69	3,633	128	148	15		905	4,829
1994	59	3,208	166	84	153		857	4,468
1995	60	2,818	86	192	100		690	3,886
1996	44	2,321	99	89	85		579	3,173
1997	34	2,438	101	21	5		740	3,304
1998	36	1,795	44	33	52		389	2,314
1999	42	2,434	106	35	2		806	3,384
2000	31	842	16	11	0		262	1,131
2001	57	2,493	111	105	16		928	3,653
2002	53	1,892	65	34	12		356	2,359
2003	62	3,240	84	32	10		297	3,663
2004	46	2,618	169	410	91		1,423	4,711
20 Year Average	51	2,337	88	101	37	[c]	564	3,126
1985-1994 Average	55	2,384	87	107	37	[c]	481	3,095
1995-2004 Average	47	2,289	88	96	37	[c]	647	3,158
2005 [b]	50	2,217	89	118	26		653	3,103

-continued-

Appendix A29.–Page 2 of 3.

Year	Permits Issued	Sockeye	Chinook	Chum	Pink		Coho	Total
UGASHIK DISTRICT								
1985	9	233	17	7			143	400
1986	27	1,080	83	48	21		335	1,567
1987	22	892	104	51	29		272	1,348
1988	23	1,400	84	55	35		330	1,904
1989	22	1,309	32	35	2		214	1,592
1990	37	1,578	51	143	120		280	2,172
1991	38	1,403	121	168	42		614	2,348
1992	37	2,348	106	79	8		397	2,938
1993	39	1,766	86	107	24		495	2,478
1994	31	1,587	126	42	38		579	2,372
1995	20	1,513	56	18	6		290	1,883
1996	26	1,247	50	21	7		298	1,623
1997	28	2,785	169	39	23		311	3,327
1998	27	1,241	59	75	82		485	1,942
1999	25	1,365	35	5	0		271	1,675
2000	31	1,927	51	34	1		467	2,481
2001	24	1,197	61	8	2		357	1,624
2002	23	1,294	51	14	2		460	1,821
2003	23	1,113	31	30	0		392	1,567
2004	21	804	64	9	4		234	1,116
20 Year	27	1,404	72	49	23	[c]	361	1,909
1985-1994	29	1,360	81	74	35	[c]	366	1,912
1995-2004	25	1,449	63	25	13	[c]	356	1,906
2005 [b]	24	1,267	52	19	2		382	1,722
NUSHAGAK DISTRICT								
1985	406	38,000	7,900	4,000	600		6,100	56,600
1986	424	49,000	12,600	10,000	5,400		9,400	86,400
1987	474	40,900	12,200	6,000	200		6,200	65,500
1988	441	31,086	10,079	8,234	6,316		5,223	60,938
1989	432	34,535	8,122	5,704	407		8,679	57,447
1990	441	33,003	12,407	7,808	3,183		5,919	62,320
1991	528	33,161	13,627	4,688	292		10,784	62,552
1992	476	30,640	13,588	7,076	3,519		7,103	61,926
1993	500	27,114	17,709	3,257	240		5,038	53,358
1994	523	26,501	15,490	5,055	2,042		5,338	54,426
1995	484	22,793	13,701	2,786	188		3,905	43,373
1996	481	22,935	15,941	4,704	1,573		5,217	50,370
1997	538	25,080	15,318	2,056	218		3,433	46,106
1998	562	25,217	12,258	2,487	1,076		5,316	46,355
1999	548	29,387	10,057	2,409	124		3,993	45,969
2000	541	24,451	9,470	3,463	1,662		5,983	45,029
2001	554	26,939	11,760	3,011	378		5,993	48,080
2002	520	22,777	11,281	5,096	1,179		4,565	44,897
2003	527	25,491	18,686	5,064	403		5,432	55,076
2004	511	17,491	15,610	3,869	1,944		4,240	43,154
20 Year	496	29,325	12,890	4,838	1,547	[c]	5,893	54,494
1985-1994	465	34,394	12,372	6,182	2,220	[c]	6,978	62,147
1995-2004	527	24,256	13,408	3,494	875	[c]	4,808	46,841
2005 [b]	531	23,430	13,361	4,101	1,113		5,243	47,247

-continued-

Appendix A29.–Page 3 of 3.

Year	Permits Issued	Sockeye	Chinook	Chum	Pink		Coho	Total
TOGIAK DISTRICT								
1985	51	3,400	600	1,000	100		1,500	6,600
1986	29	2,400	700	800	100		500	4,500
1987	46	3,600	700	1,000			1,600	6,900
1988	29	2,413	429	716	45		792	4,395
1989	40	2,825	551	891	112		976	5,355
1990	37	3,689	480	786	60		1,111	6,126
1991	43	3,517	470	553	27		1,238	5,805
1992	40	3,716	1,361	626	135		1,231	7,069
1993	38	2,139	784	571	8		743	4,245
1994	25	1,777	904	398	77		910	4,066
1995	22	1,318	448	425	0		703	2,894
1996	19	662	471	285	59		199	1,676
1997	31	1,440	667	380	0		260	2,747
1998	42	2,211	782	412	76		310	3,791
1999	76	3,780	1,244	479	84		217	5,804
2000	54	3,013	1,116	569	90		342	5,130
2001	92	4,162	1,612	367	61		388	6,590
2002	36	2,319	703	605	10		241	3,878
2003	92	4,403	1,208	483	451		883	7,428
2004	46	1,795	1,094	383	108		204	3,584
20 Year Average	44	2,729	816	586	84	[c]	717	4,929
1985-1994 Average	38	2,948	698	734	74	[c]	1,060	5,506
1995-2004 Average	51	2,510	934	439	94	[c]	375	4,352
2005 [b]	64	3,138	1,147	481	144		412	5,322
TOTAL BRISTOL BAY AREA								
1985	1,033	149,758	9,710	5,568	728		9,049	174,813
1986	933	130,815	14,747	11,601	7,549		11,204	175,916
1987	998	135,493	14,356	7,895	689		9,453	167,886
1988	936	124,449	11,746	9,680	7,367		7,491	160,733
1989	955	127,408	9,725	7,356	799		12,210	157,498
1990	1,042	131,701	13,976	9,683	4,434		8,367	168,161
1991	1,197	139,731	15,452	6,655	584		14,122	176,544
1992	1,204	134,330	16,623	10,772	5,314		10,612	177,651
1993	1,206	136,207	20,787	6,559	1,049		9,206	173,808
1994	1,193	120,735	18,529	6,082	2,770		9,491	157,607
1995	1,119	104,086	15,722	4,580	677		7,378	132,443
1996	1,110	108,470	18,136	5,915	2,518		7,775	142,813
1997	1,166	116,991	19,159	2,974	668		6,201	145,992
1998	1,234	113,560	15,576	3,792	2,349		8,093	143,368
1999	1,219	122,281	13,009	3,653	420		6,143	145,506
2000	1,219	92,050	11,547	4,637	2,599		7,991	118,824
2001	1,226	92,041	14,412	4,158	839		8,406	119,856
2002	1,093	81,088	12,936	6,658	2,341		6,565	109,587
2003	1,182	95,690	21,231	5,868	1,062		7,816	131,667
2004	1,100	93,819	18,012	5,141	3,225		6,667	126,865
20 Year Average	1,118	117,535	15,270	6,461	2,399	[c]	8,712	150,377
1985-1994 Average	1,070	133,063	14,565	8,185	3,128	[c]	10,121	169,062
1995-2004 Average	1,167	102,008	15,974	4,738	1,670	[c]	7,304	131,692
2005 [b]	1,164	90,938	15,628	5,292	2,013		7,489	121,360

[a] Permit and harvest estimates prior to 1989 are based on the community where the permit was issued; estimates from 1989 to the present are based on the area fished, as first recorded on the permit.

[b] A 5 year average was used as data was not available at the time of publication.

[c] Includes even years only.

Appendix A30.–Subsistence harvest of sockeye salmon by community, in numbers of fish, Kvichak River drainage, Bristol Bay, 1985–2005.

Year [ab]	Levelock	Igiugig	Pedro Bay	Kokhanok	Iliamna-Newhalen[c]	Nondalton	Port Alsworth	Other[d f]	Total
1985	6,600	3,400	12,900	21,900	22,300	14,900	4,500		86,500
1986	6,400	1,600	6,700	18,300	17,000	6,600	3,300		59,900
1987	5,700	[e]	7,300	16,500	27,500	11,800	3,200		72,000
1988	3,500	[e]	5,500	14,400	29,800	20,700	3,200	[f]	77,100
1989	5,100	1,200	6,700	13,000	24,700	18,500	2,200	[f]	71,400
1990	4,700	2,200	6,600	12,400	18,800	27,300	3,200	1,400	76,600
1991	1,029	1,712	9,739	17,184	29,094	4,163	2,755	1,110	66,786
1992	4,374	1,056	6,932	11,477	29,633	13,163	2,954	2,559	72,148
1993	4,699	1,397	6,226	18,810	19,067	17,890	3,254	2,780	74,123
1994	1,467	1,201	8,747	15,771	15,553	15,246	3,074	3,284	64,343
1995	3,756	497	5,359	14,412	20,134	4,188	2,892	3,441	54,679
1996	1,120	2,309	5,219	14,011	14,787	11,856	3,263	2,307	54,872
1997	1,062	2,067	5,501	8,722	19,513	17,194	2,348	3,101	59,508
1998	2,454	1,659	3,511	10,418	16,165	13,136	2,678	3,635	53,656
1999	1,276	1,608	5,005	10,725	14,129	17,864	4,282	2,834	57,723
2000	1,467	1,981	1,815	7,175	6,679	11,953	3,200	2,720	36,990
2001	908	779	2,118	9,447	8,132	7,566	1,958	1,901	32,808
2002	625	2,138	2,687	9,847	9,417	5,508	1,201	1,578	33,001
2003	737	1,081	2,135	9,771	13,824	8,016	1,370	1,591	38,495
2004	1,000	1,026	4,803	11,869	21,652	8,789	2,455	1,631	53,225
20 Year Ave.	2,899	1,606	5,775	13,307	18,894	12,817	2,864	2,391	59,793
1985-94 Ave.	4,357	1,721	7,734	15,974	23,345	15,026	3,164	2,227	72,090
1995-04 Ave.	1,441	1,515	3,815	10,640	14,443	10,607	2,565	2,474	47,496
2005 [g]	947	1,401	2,711	9,622	11,941	8,366	2,037	1,884	38,904

Note: Blank cells represent no data.

[a] Harvests are extrapolated for all permits issued, based on those returned. Harvest estimates from 1991 are rounded to the nearest hundred fish.

[b] Harvest estimates prior to 1990 are based on the community where the permit was issued; estimates from 1990 to the present are based on community of residence and include fish caught only in the Kvichak District.

[c] Includes Chekok.

[d] Subsistence harvests by non-Kvichak River watershed residents.

[e] No permits issued.

[f] No permits issued. Only residents of the Naknek/Kvichak watershed could obtain subsistence permits.

[g] A 5 year average was used as current data was not available at the time of publication.

Appendix A31.–Subsistence salmon harvest by community, Nushagak District, Bristol Bay, 1985–2005.

Year[a, b]	Dillingham[c]	Manokotak	Aleknagik	Ekwok	New Stuyahok	Koliganek	Other[d]	Total
1985	22,900	3,600	1,600	7,000	14,500	6,800		56,400
1986	31,900	5,500	6,900	7,800	26,400	8,200		86,700
1987	33,500	5,900	3,100	6,400	11,400	4,900		65,200
1988	29,600 [e]	5,500	2,400	6,100	11,700	5,700	[f, c]	61,000
1989	31,800 [e]	5,800	2,000	4,700	9,700	3,800	[f, c]	57,800
1990	28,860 [e]	6,600	2,300	4,900	9,900	8,000	700	61,260
1991	34,399 [e]	5,873	3,043	4,532	8,326	5,438	2,163	63,774
1992	31,702 [e]	4,317	2,184	5,971	11,325	3,708	2,635	61,842
1993	25,315 [e]	3,048	2,593	2,936	12,169	4,180	2,538	52,779
1994	30,145 [e]	3,491	2,289	4,343	8,056	4,513	2,322	55,159
1995	24,998 [e]	2,453	1,468	2,046	6,911	2,983	2,406	43,265
1996	27,161 [e]	3,883	1,733	2,866	8,892	3,319	2,113	49,967
1997	23,255 [e]	3,988	1,989	1,797	6,427	4,179	4,598	46,233
1998	24,072 [e]	4,069	1,112	3,555	5,419	3,166	4,958	46,351
1999	26,502 [e]	3,413	1,532	1,805	4,556	2,772	5,389	45,969
2000	27,931 [e]	3,173	1,111	3,946	3,715	2,792	2,362	45,029
2001	26,435 [e]	3,700	2,129	2,218	7,294	2,209	4,096	48,080
2002	25,004 [e]	3,254	1,517	2,735	6,043	3,098	3,247	44,897
2003	26,955 [e]	4,214	2,044	2,291	10,817	5,721	3,034	55,076
2004	23,308 [e]	2,052	2,206	1,891	6,714	3,619	3,364	43,154
20 Year Ave.	28,147	4,294	2,282	4,257	10,002	5,129	3,040	56,239
1985-94 Ave.	30,048	5,024	2,872	5,754	13,192	6,783	2,009	64,476
1995-04 Ave.	26,246	3,564	1,692	2,760	6,813	3,475	3,453	48,003
2005	25,926	3,279	1,801	2,616	6,917	3,488	3,221	47,247

[a] Harvests are extrapolated for all permits issued, based on those returned. Harvest estimates prior to 1991 are rounded to the nearest hundred fish.

[b] Harvest estimates prior to 1990 are based on the community where the permit was issued; estimates from 1990 to the present are based on community of residence and include fish caught only in the Nushagak District.

[c] Includes the village of Portage Creek and Clarks Point.

[d] Subsistence harvests by non-watershed residents.

[e] Includes permits issued in Clarks Point and Ekuk.

[f] No permits issued. Only residents of the Nushagak watershed could obtain subsistence permits.

APPENDIX B. HERRING

Appendix B1.–Sac roe herring industry participation, fishing effort and harvest, Togiak District, 1985–2005.

				Gillnet					Purse Seine					
Year	Number of Buyers	Daily Processing Capacity[a]	Fishery Dates	Effort[b]	Duration (hours)	Harvest[c]	CPUE	Roe %	Effort[b]	Duration (hours)	Harvest[c]	CPUE	Roe %	Total Harvest[c]
1985	23		5/23-5/25	302	11.0	4,482	1.3	7.4	155	3.0	21,330	45.9	10.0	25,812
1986	23		5/14-5/15	209	10.0	3,448	1.6	8.8	209	1.0	12,828	61.4	9.9	16,276
1987	18		4/27-5/6	148	36.0	2,685	0.5	8.6	111	5.5	12,845	21.0	8.9	15,530
1988	22		5/17	300	4.0	3,695	3.1	8.3	239	0.5	10,472	87.6	10.9	14,167
1989	19		5/9-5/14	320	5.0	2,844	1.8	7.8	310	3.0	9,415	10.1	8.5	12,259
1990	16	3,100	5/8-5/20	277	66.0	3,072	0.2	9.0	221	3.0	9,158	13.8	9.7	12,230
1991	16	3,350	5/10-5/17	170	14.0	3,182	1.3	8.5	200	3.0	11,788	19.6	10.0	14,970
1992	18	3,700	5/20-5/27	274	25.5	5,030	0.7	8.8	301	0.3	20,778	230.1	9.2	25,808
1993	12	2,500	4/27-5/9	75	144.5	3,564	0.3	10.1	140	33.8	14,392	3.0	9.6	17,956
1994	16	3,300	5/11-5/20	146	76.0	7,462	0.7	12.0	240	4.6	22,853	20.7	9.4	30,315
1995	22	4,350	5/7-5/15	250	33.5	6,995	0.8	12.0	254	12.2	19,737	6.4	10.1	26,732
1996	19	4,850	5/3-5/8	461	18.0	6,863	0.8	11.1	268	2.4	18,008	27.8	9.0	24,871
1997	18	4,200	5/2-5/6	336	24.0	5,164	0.6	11.8	231	6.4	18,649	12.6	9.4	23,813
1998	15	2,475	4/29-5/10	152	46.0	5,952	0.9	12.5	123	16.5	16,824	8.3	9.6	22,776
1999	12	2,400	5/18-5/26	171	28.0	4,858	1.0	11.5	96	4.7	15,020	33.3	9.2	19,878
2000	12	2,100	5/6-5/14	227	67.0	5,464	0.4	10.6	90	15.8	14,957	10.6	10.1	20,421
2001	11	2,255	5/6-5/13	96	84.0	6,481	0.8	10.6	64	26.0	15,849	9.5	9.2	22,330
2002	8	1,920	5/3-5/13	82	102.0	5,216	0.6	10.9	37	57.5	11,833	5.6	9.3[d]	17,049
2003	7	1,920	4/25-5/7	75	142.0	6,505	0.6	10.9	35	110.2	15,158	3.9	8.9[d]	21,663
2004	6	2,150	4/29-5/9	54	162.0	4,980	0.6	10.4	31	78.0	13,888	5.7	9.5	18,868
1985-2004 Ave.	16	2,971		206	54.9	4,897	0.9	10.1	168	19.4	15,289	31.8	9.6	20,186
1995-2004 Ave.	14	2,862		190	70.7	5,848	0.7	11.2	123	33.0	15,992	12.4	9.5	21,840
2005	8	2,330	4/30-5/8	56	149.0	5,841	0.7	11.2	33	83.0	13,869	5.1	9.6	19,711

Note: Blank cells represent no data.

[a] Number of tons per day based on companies registered.

[b] Peak aerial survey count.

[c] Harvest total does include deadloss and test fish harvest.

[d] Values are lower than inseason assessment due to more stringent post-season market scrutiny compared with previous years.

Appendix B2.–Exploitation of Togiak herring stock, 1985–2005.

Year	Biomass Estimate[a] (short tons)	S-O-K Herring Equivalent	Dutch Harbor Food/Bait	Sac Roe				Total Harvest	Exploitation Rate
				Gillnet	Purse Seine[b]	Waste[c]	Total		
1985	114,604	0		4,482	21,330		25,812	25,812	22.5%
1986	86,310	1,446		3,448	12,828		16,276	17,722	20.5%
1987	64,462	1,309		2,685	12,845		15,530	16,839	26.1%
1988	128,959	1,782	2,004	3,695	10,472		14,167	17,953	13.9%
1989	80,100	2,499	3,081	2,844	9,415		12,259	17,839	22.3%
1990	71,879	1,617	820	3,072	9,158		12,230	14,667	20.4%
1991	55,000	1,310	1,325	3,182	11,788		14,970	17,605	32.0%
1992	129,256	1,482	1,949	5,030	20,778		25,808	29,239	22.6%
1993	164,130	1,481	2,790	3,564	14,392		17,956	22,227	13.5%
1994	148,716	1,134	3,349	7,462	22,853		30,315	34,798	23.4%
1995	149,093	996	1,748	6,995	19,737		26,732	29,476	19.8%
1996	135,585	1,899	2,239	6,863	18,008		24,871	29,009	21.4%
1997	125,000	0	1,950	5,164	18,649	350	23,813	25,763	20.6%
1998	121,000	0	1,994	5,952	16,824	400	22,776	24,770	20.5%
1999	156,183	1,605	2,398	4,858	15,020	221	19,878	23,881	15.3%
2000	130,904	0	2,014	5,464	14,957	100	20,421	22,435	17.1%
2001	119,818	0	1,439	6,481	15,849	219	22,330	23,769	19.8%
2002	120,196	260	2,846	5,216	11,833	40	17,049	20,155	16.8%
2003	126,213	55	1,487	6,505	15,158	380	21,663	23,205	18.4%
2004	143,124	0	1,258	4,980	13,785	103	18,765	20,023	14.0%
1985-04 Ave.	118,527	944	2,041	4,897	15,284	227	20,181	22,859	20.1%
1995-04 Ave.	132,712	482	1,937	5,848	15,982	227	21,830	24,249	18.4%
2005	156,727	0	1,154	5,841	15,071	784	20,912	22,066	14.1%

Note: Blank cells represent no data.

[a] Preseason forecast unless peak biomass estimate inseason exceeded preseason forecast.

[b] Includes test fish harvest.

[c] Estimated waste, also included in purse seine harvest.

Appendix B3.–Age composition of inshore herring, Togiak District, 1985–2005.

	Age Composition (%)[a]								
Year	**3** [c]	**4**	**5**	**6**	**7**	**8**	**9+**	**Total** [b]	**Run (tons)**
1985		1.0	1.0	8.0	35.0	42.0	13.0	131,400	
1986			1.0	2.0	15.0	44.0	38.0	94,770	
1987				8.0	10.0	28.0	54.0	88,398	
1988		2.0	5.0	1.0	13.0	5.0	74.0	134,718	
1989			5.0	11.0	4.0	15.0	65.0	98,965	
1990	[d]	[d]	[d]	6.0	11.0	3.0	80.0	88,105	
1991		7.0	1.0	1.0	16.0	18.0	57.0	83,229	
1992	[d]	10.0	20.0	1.0	1.0	15.0	53.0	156,957	
1993		[d]	6.0	23.0	1.0	1.0	67.0	193,847	
1994		[d]	2.0	12.0	28.0	3.0	55.0	185,412	
1995		1.0	4.0	7.0	24.0	30.0	35.0		[e]
1996		[d]	3.0	5.0	7.0	21.0	64.0		[e]
1997	[d]	7.0	5.0	12.0	11.0	10.0	55.0	144,887	
1998		[d]	4.0	5.0	10.0	11.0	70.0		[e]
1999	[d]	[d]	1.0	13.0	9.0	12.0	65.0	157,028	
2000	[d]	[d]	1.0	2.0	17.0	16.0	63.0		[e]
2001		5.0	21.0	5.0	4.0	27.0	39.0	115,155	
2002		1.0	25.0	28.0	4.0	5.0	36.0		[e]
2003		[d]	3.0	37.0	25.0	4.0	31.0		[e]
2004		[d]	[d]	3.8	43.7	24.6	27.5		[e]
2005		[d]	0.5	1.0	13.2	44.3	40.8	156,727	

[a] Age composition in 1984–1992 is weighted by aerial survey data and weight at age.

[b] Includes commercial catch, escapement, and documented waste.

[c] Includes age 1, 2 and 3 herring.

[d] Contribution of age class is less than 0.5%.

[e] Age contribution of the commercial purse seine harvest (by weight) was used to represent the total run for the 1995, 1996, 1998, 2000, 2002,2003 and 2004 fishing seasons. Aerial surveys to determine abundance were hampered by poor weather conditions preventing estimation of total biomass estimate.

Appendix B4.–Herring spawn-on-kelp industry participation, fishing effort, area and harvest, Togiak District, 1985–2005.

Year	Companies	Fishery Dates	Hours	Effort[a]	Area	Total Harvest (pounds)	Herring Equivalent (in tons)	Openings	Average Roe %
1985		no fishery							9.6
1986	6	5/18-5/21	21.0	204	K 7, K 8, K 9	374,142	1,446	4	9.7
1987	5	4/29-5/4	6.6	187	K 9, K 10	307,307	1,309	5	8.8
1988	10	5/20	6.0	259	K 4, K 8	489,320	1,782	1	10.3
1989	11	5/14	4.0	487	K 9	559,780	2,499	1	8.3
1990	7	5/11	3.0	481	K 8	413,844	1,617	1	9.5
1991	7	5/13	2.5	532	K 4	348,357	1,310	1	9.7
1992	5	5/23	3.3	386	K 9	363,600	1,482	2	9.1
1993	2	5/1-5/2	7.0	173	K 8	383,000	1,481	2	9.7
1994	3	5/13-5/14	7.5	204	K 5	308,400	1,134	2	10.0
1995	5	5/11-5/14	14.5	188	K 2, K 3	281,600	996	3	10.6
1996	3	5/9-5/10	12.0	200	K 8, K 9	455,800	1,899	2	9.6
1997		no fishery							
1998		no fishery							
1999	1	5/23	8.0	130	K 9	419,563	1,605	2	9.8
2000		no fishery							
2001		no fishery							
2002	1	5/14	2.0	50	K9	67,793	260	1	9.8
2003	1	5/3-5/4	3.0	35	K-3	13884 [b]	55	1	9.45 [b]
2004		no fishery							
1995-2004 Average	2		7.9	121		247,728	963	2	9.9
2000-2004 Average	1		2.5	43		40,839	158	1	9.6
2005		no fishery							

[a] 1984–1989 and 1992–1996, number of permits fished based on fish tickets. 1990 and 1991, peak aerial survey count.

[b] Data confidential under Alaska Statute 16.05.815.

Appendix B5.–Aerial survey estimates of herring biomass and spawn deposition, Togiak District, 1985–2005.

	Preseason	Biomass		Spawn Estimates	
Year	Forecast[a]	Estimate		Observations	Miles
1985	81,899	131,400		141	43
1986	86,310	94,770		182	67
1987	61,100	88,398		160	76
1988	54,500	134,718		107	61
1989	80,100	98,965		69	53
1990	56,000	88,105		94	66
1991	55,000	83,229		90	70
1992	60,214	156,957		160	97
1993	148,786	193,847		76	53
1994	142,497	185,412		80	72
1995	149,093	149,093	[b]	70	59
1996	135,585	135,585	[b]	99	73
1997	125,000	144,887		79	59
1998	121,000	121,000	[b]	42	33
1999	90,000	157,028		33	56
2000	130,904	130,904	[b]	71	46
2001	119,818	115,155	[b]	100	57
2002	120,196	120,196	[b]	79	32
2003	126,213	126,213	[b]	182	95
2004	143,124	143,124	[b]	47	36
1985-04 Average	104,367	128,482		98	60
1995-04 Average	126,093	131,383		80	55
2005	96,029	156,727		106	28

[a] 1993–2005 forecasts based on Age Structured Analysis. Previous years based on age composition, abundance, average growth and mortality rates.

[b] Peak biomass estimate could not be determined, therefore, preseason forecast was used.

Appendix B6.–Exvessel value of the commercial herring and spawn-on-kelp harvest, in thousands of dollars, Togiak District, 1985–2005.

	Herring			
Year	**Sac Roe**	**Food/Bait**	**Spawn-on-Kelp**	**Total**
1985	13,696	41	[a]	13,737
1986	8,648	12	187	8,847
1987	8,614	49	166	8,829
1988	14,103	3	346	14,452
1989	4,983	19	448	5,450
1990	6,494	9	360	6,863
1991	6,173	21	383	6,577
1992	8,818	26	254	9,098
1993	5,218	3	268	5,489
1994	9,090	0	212	9,302
1995	16,713	0	362	17,075
1996	14,395	5	510	14,910
1997	4,306	0	[a]	4,306
1998	3,986	0	[a]	3,986
1999	6,211	0	315	6,526
2000	4,000	0	[a]	4,000
2001	3,090	0	[a]	3,090
2002	1,880	0	20	1,900
2003	2,797	0	[b]	2,797
2004	2,541	0	[a]	2,541
1985-04 Average	7,288	9	295	7,489
1995-04 Average	5,992	1	302	6,113
2005	2,978	0	[a]	2,978

Note: Exvessel value (value paid to the fishermen) is derived by multiplying price/ton by the commercial harvest. These estimates do not include any postseason adjustments to fishermen from processors and should therefore be treated as minimum estimates.

[a] Fishery not conducted.

[b] Data confidential under Alaska Statute 16.05.815.

Appendix B7.–Guideline and actual harvests of sac roe herring (tons) and spawn-on-kelp (lbs), Togiak District, 1985–2005.

	Gillnet Sac Roe			Purse Seine Sac Roe			Spawn-on-Kelp		
Year	Guideline[a]	Actual	% Difference[c]	Guideline[a]	Actual[b]	% Difference[c]	Guideline[a]	Actual	% Difference[c]
1985		4,482			21,330		350,000	[d]	
1986		3,448			12,828		350,000	374,142	7
1987		2,685			12,845		350,000	307,307	-12
1988	5,647	3,695	-35	16,943	10,472	-38	350,000	489,320	40
1989	3,376	2,844	-16	10,128	9,415	-7	350,000	559,780	60
1990	2,993	3,072	3	8,980	9,158	2	350,000	413,844	18
1991	3,143	3,182	1	9,429	11,788	25	350,000	348,357	0
1992	5,662	5,030	-11	16,985	20,778	22	350,000	363,600	4
1993	6,570	3,564	-46	19,709	14,392	-27	350,000	383,000	9
1994	6,277	7,462	19	18,832	22,853	21	350,000	308,400	-12
1995	6,582	6,995	6	19,747	19,737	0	350,000	281,600	-20
1996	5,956	6,863	15	17,868	18,008	1	350,000	455,800	30
1997	5,464	5,164	-5	16,391	18,649	14	350,000	[d]	
1998	5,280	5,952	13	15,840	16,824	6	350,000	[d]	
1999	6,914	4,858	-30	20,741	15,020	-28	350,000	419,563	20
2000	5,738	5,464	-5	17,215	14,957	-13	350,000	[d]	
2001	6,268	6,481	3	14,624	15,849	8	350,000	[d]	
2002	6,288	5,216	-17	14,673	11,833	-19	350,000	67,793	-81
2003	6,624	6,505	-2	15,457	15,158	-2	350,000	[e]	-96
2004	7,568	4,980	-34	17,658	13,888	-21	350,000	[d]	
1989-04 Ave.	5,542	5,243	-5	15,775	15,628	0	350,000	328,693	-6
1995-04 Ave.	6139	6,096	-0	17,1388	16,889	-1	350,000	257,840	0
2005	5,667	5,841	3	13,224	15,071	14	350,000	[d]	

[a] Harvest guideline derived from inseason biomass estimate when available, or preseason forecast if weather prevents an estimate. Harvest guidelines were not adopted until 1988.

[b] Includes deadloss and test fish harvest.

[c] Actual minus guideline divided by guideline.

[d] No fishery conducted.

[e] Data confidential under Alaska Statute 16.05.815.